A W. R. C. Smith publication — FIFTY CENTS

Textile Industries

Formerly "COTTON"

DECEMBER, 1957

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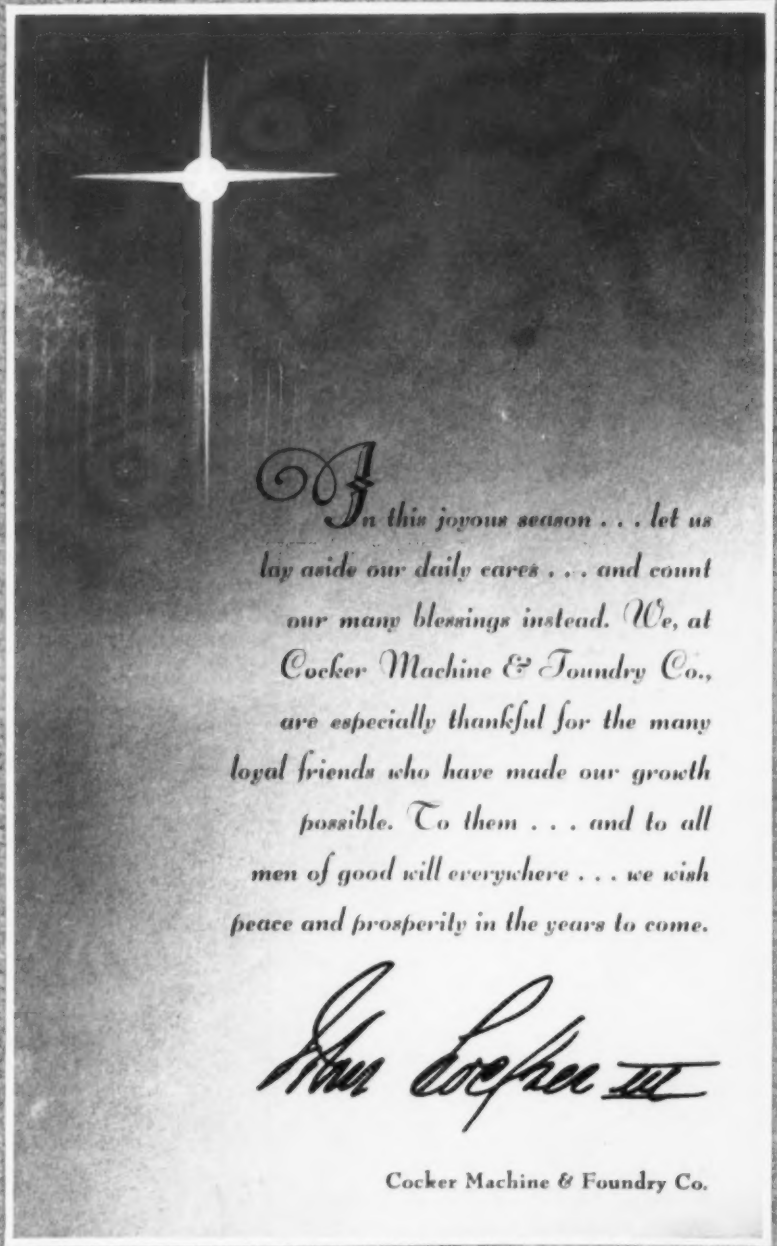
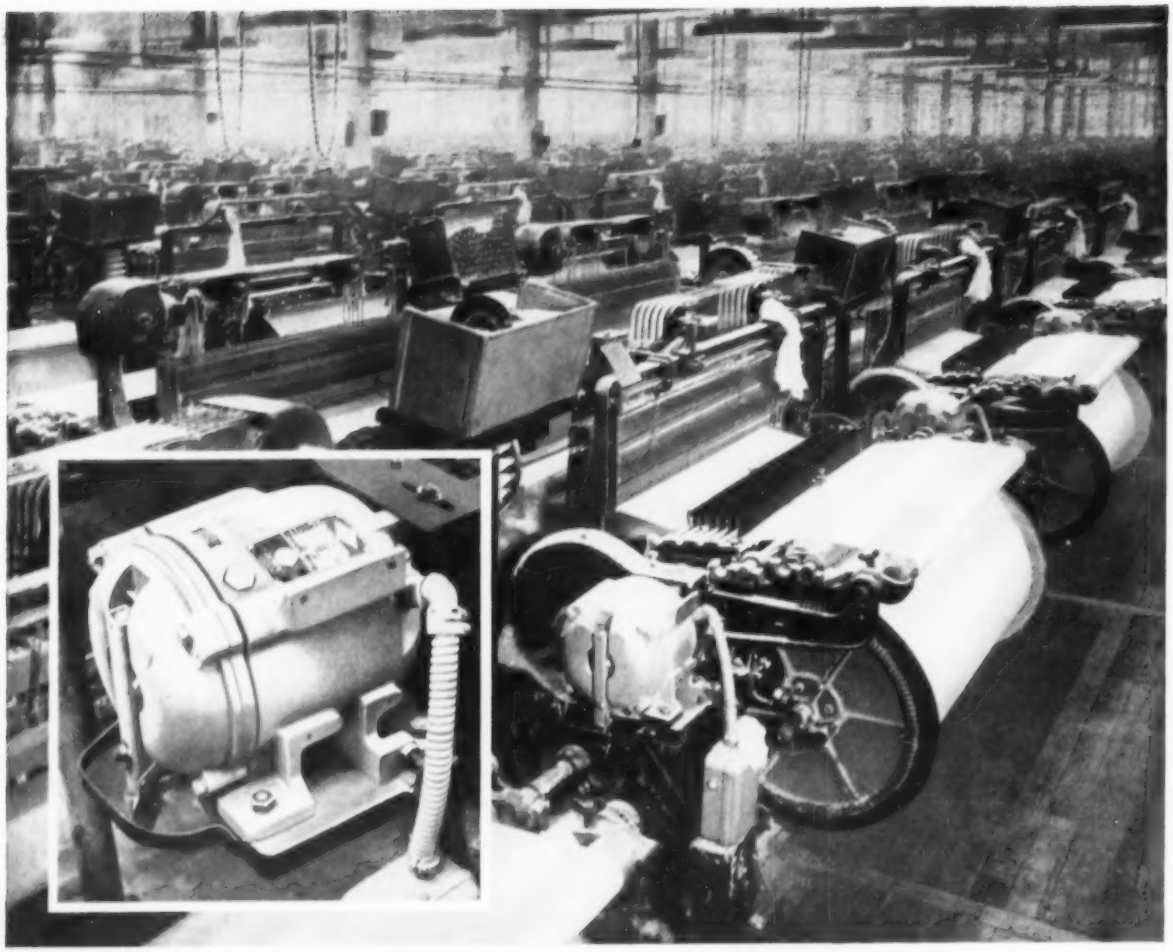

In this joyous season . . . let us lay aside our daily cares . . . and count our many blessings instead. We, at Cocker Machine & Foundry Co., are especially thankful for the many loyal friends who have made our growth possible. To them . . . and to all men of good will everywhere . . . we wish peace and prosperity in the years to come.
Cocker Machine & Foundry Co.

Next month: A handy reference—Index of TI's 1957 articles



AT CONE MILLS

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Three hundred Draper looms powered by the latest type DIEHL Power Transmitters were recently installed as part of an important new modernization program at Cone Mills Corporation's Minneola Plant, Gibsonville, N. C., with most satisfactory results in the improvement of loom performance and product quality.

DIEHL Power Transmitters were developed especially for Draper looms, and feature a fast, positive clutch-brake mechanism combined with an inverted type motor which provides high inertia without need for a separate flywheel. This design produces a constant steady pull for more efficient weaving and better quality greige goods, in the opinion of a plant official. "Increased efficiency of looms will be joined by lower operating costs because of the combination of Draper X2 looms and DIEHL Transmitters," he said. The looms now run at 186 picks per minute.

Cone Mills plant officials are favorably impressed with the positive action of the clutch-brake mechanism, the pinion driving shaft construction which eliminates the thrust bearing on the loom, the speed and ease of removal and replacement of the transmitter for inspection and servicing, the totally enclosed housing design which protects against weave room lint and fly, and the negligible maintenance and down-time costs.

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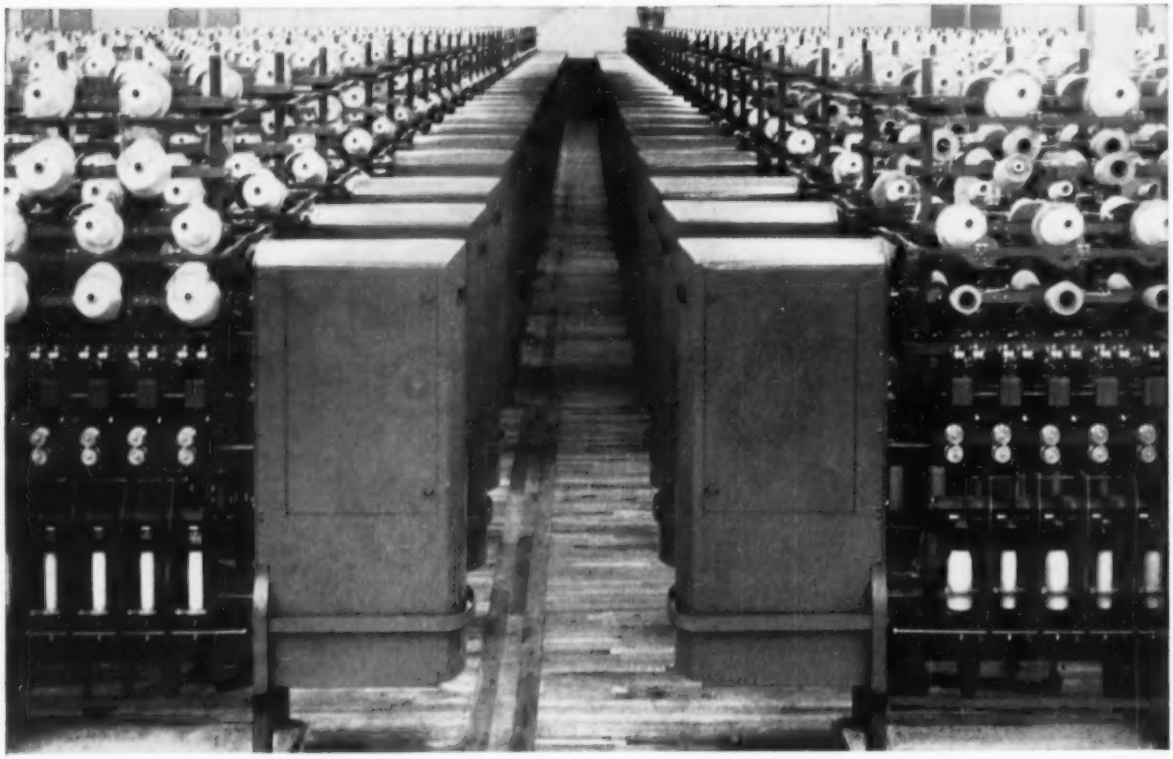
WAVY

PAGES

What Fletcher recommends to assure dependable performance

● Based on its years of experience and its test of various brands and types of lubricants, Fletcher Works, Inc., Philadelphia, has long recommended Texaco to assure the dependable field performance of its equipment.



Texaco Spindura Oil, for example, is recommended for the famous Fletcher Master Duplex Double-Twister. *Texaco Spindura Oil* has high oxidation resistance, does not thicken or form gum, does not atomize or fog. This means you can run heavy packages at full speed and be sure of cleaner yarn.

For cam surfaces, jacks, slide and connecting rods on its narrow fabric looms, Fletcher recommends *Texaco Stazon* because it *stays* on the lubricated parts, does not splatter, creep or drip.

Fletcher Works is just one of the leading textile machinery manufacturers who use and recommend Texaco. Let a Texaco Lubrication Engineer help you get better performance from *all* your equipment. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write:

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Textile Industries

Formerly "COTTON"

Vol. 121, No. 12
December, 1957

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EDITORIAL AND EXECUTIVE OFFICES: 806 Peachtree St., N. E., Atlanta 8, Georgia

J. Frank Guest
Managing Editor

George H. Dockray
Executive Editor

Milton C. May
Associate Editor
P. O. Box 11015
Charlotte 9, N. C.

Stanley M. Suchecki
Associate Editor
P. O. Box 131
New Canaan, Conn.

Jesse W. Ellington
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Melba L. Rowan
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J. A. Moody, *Production Manager*

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BUSINESS REPRESENTATIVES

BOSTON—Arthur C. Shaw, *27 Southgate Rd., Wellesley 81, Mass. (Phone: Cedar 5-3648).*

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TIME SAVER for busy readers

Here is a summary of the major articles in this issue

Use it to organize your reading time most effectively

What Size Package Should We Make? 77

■ In setting up front roll speeds and package sizes, it is often assumed that the highest speed and the largest package size will result in the greatest possible economy. This is true as far as the spinning process alone is concerned; however, in an integrated manufacturing operation it is not feasible to isolate a single process.

In this article, the author, who is connected with a large southern cotton mill, shows that the biggest package is not always the most economical. Instead, the size of the package, and thus the time it takes to unwind it, must be geared to the length of the winding and spooling equipment machine cycle, or multiples thereof.

In making decisions involving package size, it is helpful to have tables which show at a glance which combination of variables yields the best results for the equipment and yarn concerned. The tables accompanying this article make it possible to cut to a minimum the computations involved in selecting optimum package size.

One Key to Blending Synthetics 81

■ Waverly Mills, Inc., Laurinburg, N. C., spins a wide range of yarns from man-made fibers—counts spun range from 0.90s to 40s, from 2- to 15-ply, and package sizes run from 2 to 11 pounds. The fibers used include bright and dull viscose, solution-dyed viscose, nylon, acetate, Arnel, Dacron, and Orlon, in a wide range of blends. The mill uses cotton-system equipment.

One of TI's editors visited Waverly recently; his report shows how the mill makes and keeps track of the numerous blends run, and how contamination is prevented. The slashing of synthetic yarns is also discussed. Staff-made photos show the principal operations in the mill.

Fabric Defects in Wool Finishing 84

■ Finishing is an operation which effects a considerable change in the appearance and value of a woolen or worsted fabric; the average finishing operation is simple in the mechanical sense, but important in its results. Woolen and worsted fabrics are subject to unique imperfections in finishing; when their cause is traced, a mistake in handling by the operator is usually found.

This article is the first of a series of two; it examines each operation in wet finishing, from the standpoint of the defects that can occur, what causes them, and how they can be corrected. The second article, to appear in the January issue of TEXTILE INDUSTRIES, will deal similarly with dry finishing, piece dyeing, and back-washing.

The author, Richard G. Stoehr, is vice-president and general manager of Botany Finishing Co., Passaic, N. J. He has years of experience in woolen and worsted mills.

Warp Sizing 119

■ In the twentieth and concluding installment of this series, which began in the May, 1956, issue of TEXTILE INDUSTRIES, Dr. Seydel discusses controls for the warp sizing operation, including those for cooking size, maintaining level and temperature of size in the size box, moisture, tension, stretch, and squeeze roll pressure. The series will shortly be available in book form; the details will be announced later.

How Color-Knit Dyes Orlon Match-Mates 149

■ A popular fashion combination this year is the sweater-skirt ensemble, called "match-mates," in which an Orlon sweater has been dyed to match a wool skirting material. Color-Knit Dyeing Corp., Elizabeth, N. J., dyers of synthetic knit goods, has been highly successful in this exacting operation.

The most important requirement of the "match-mate" apparel is that the shade of the Orlon sweater must closely follow the so-called "light swing" of the dyed wool skirt when both are worn together under both natural and artificial lighting conditions—in daylight, incandescent, and fluorescent lighting. While Orlon can be dyed with only two color classes, the wool can be dyed with four.

In this staff-prepared article, the procedure used by Color-Knit is examined in detail. Selection of dyes, testing of formulas, matching of shades, and other phases of the dyeing procedure are discussed, and pitfalls which must be avoided, both in dyeing and in drying, are brought out.

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Photo courtesy Beacon Piece Dyeing & Finishing Co., Inc., Beacon, N. Y.

A "Liquid Lock" for textile colors

A significant advance in textile printing occurred with the advent of resin-bonded pigments. These new colors permitted striking patterns in brilliant shades with excellent fastness to sunlight, atmospheric fumes, washing and dry cleaning. But they still left something to be desired on crocking.

Finally a leading textile color manufacturer hit upon a simple solution – one based on CHEMIGUM LATEX. Combined with other materials and easily mixed into the base pigment colors at the printer's, CHEMIGUM LATEX helps form a protective coating against abnormal abrasion. The end result is greatly improved fastness to crocking plus added resistance to washing.

In addition to putting a liquid lock on pigment colors, CHEMIGUM LATEX has many other uses in the processing of textiles. Its high-binding strength, flexibility, light color and permanence plus ease of handling, compounding and applying are finding wide application in binders, coatings, finishes and adhesives of all types.

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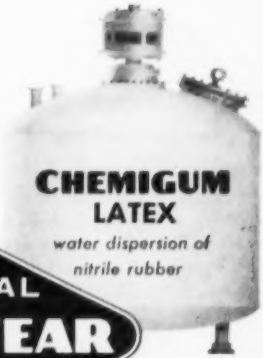

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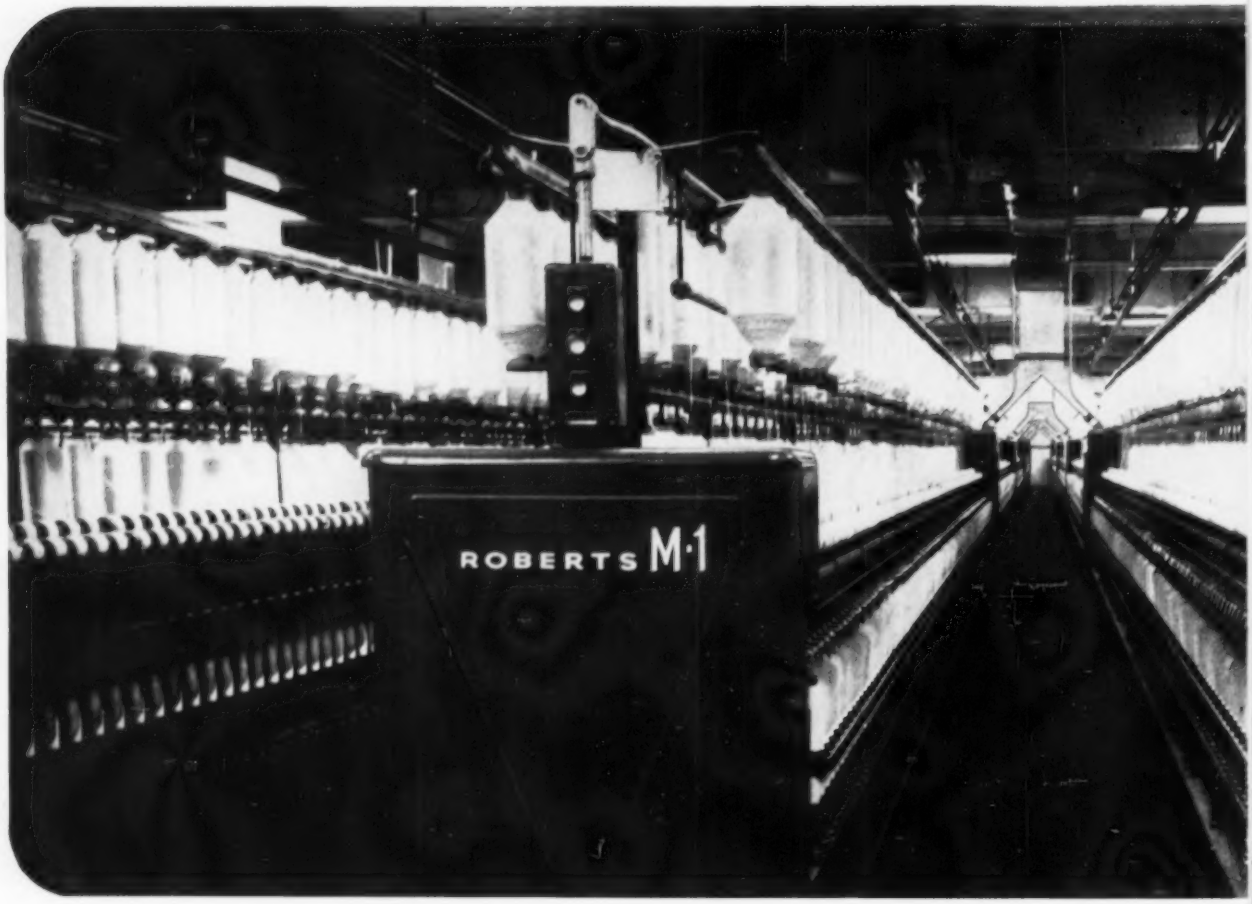

ROBERTS SPINNING

Today's standard for production, yarn quality and investment

Roberts Spinning is setting today's standard for comparison in high drafts, package sizes, roving bobbin sizes, front roll speeds, ends up, yarn break factor—and at the lowest investment cost per spindle.

TRIED AND PROVEN. The Roberts M-1 Spinning Frame is simple and straightforward, free from radical innovations or gadgets. Its design has already been tried and proven in many successful applications. It embodies all the ball bearing features most wanted in a modern spinning frame, giving highest production and lowest maintenance.

ROBERTS DRAFTING. Roberts Double-Apron Drafting produces highest break factors, best yarn evenness and lowest ends down in a range of drafts from 10 to 60, for yarn numbers from 2's to 100's, in cotton, synthetics with staples up to 3 inches long, or blends.

LARGE PACKAGE FLEXIBILITY. One basic model of the Roberts M-1 Spinning Frame is adapted to run warp bobbins with lengths from 10 inches to 12 inches as well as filling quills. Standard gauges from 3 inches to 4½ inches can be arranged to employ the maximum desirable ring size suitable for the yarn number and twist constant.

RUGGEDNESS WITH SIMPLICITY. The frame chassis is of rugged construction. The working motions use ball bearings for every turning and oscillating motion where practical. The all-ball-bearing head design is outstanding in its simplicity and flexibility. All gears in the head are hardened and have one pitch, one width, one bore and one keyway, making them completely interchangeable. Greased-for-life bearings are used in the head and all plain bearings and studs are eliminated. Draft and lay constants are adjusted simply over the complete range of yarn numbers.

STANDARD FEATURES. Standard equipment includes Roberts Ball Bearing Spindles, Roberts built-in UnitVac Suction Cleaning. Roberts AeroCreels are available in every desired package size, single or double.

Part of a spinning room in a mill with over 100 Roberts 25-inch Spinning Frames.

ROBERTS SPINNING AVAILABLE IN 3 FORMS PROVIDES MODERNIZATION AT LOWEST COST

The cost-cutting, performance, and quality features of Roberts Spinning can be obtained through changeovers to the mills' existing spinning frames, or through rebuilt frames supplied by Roberts, as well as Roberts M-1 Spinning Frames. Roberts Proposals for Spinning Modernization provide comparison on these 3 methods.

CHANGEOVERS to the mills' existing machinery can include drafting systems, spindles, creels, suction cleaning, tape drive, gearing, or any combination of these to provide the maximum return for minimum expenditures. Performance equal to new can be built into mills' existing machinery if desired in every manner and form.

ROBERTS MODEL 55-R REBUILT FRAMES provide complete new spinning performance making use only of non-functional support members of older frames, thus affecting a substantial savings and taking advantage of the all-new spinning performance and features identical to all-new frames.

ROBERTS M-1 SPINNING FRAMES are excitingly new from the ground up, with all ball bearing features. They are available in 39 inch, 36 inch, and the space-saving 25 inch widths.

ROBERTS COMPANY
SANFORD, NORTH CAROLINA

ROBERTS SPINNING NEWS

TOP ROLL SUSPENSION USES BALL BEARINGS IN ALL THREE LINES

The Roberts Ball Bearing Top Roll Suspension System uses double-row ball bearings in front, middle and back lines and incorporates many other important design advantages.

Cots have ½" hole diameter, revolve together making lap removal simpler, and are buffed on standard equipment, without attachments. Full length revolving clearers are used.

Front and back rolls are interchangeable making sequence buffing possible.

The double-row bearing raceways are ground directly into ½" shafts. Bearings are grease-packed for life and a 2-piece labyrinth seal protects them from lint entrance and roll picker damage.

The system has controlled self-alignment. Conventional deadweighting or new spring weighting is optional.

An alternate arrangement also available employs a ball bearing top roll and special suspension on the front line only with Roberts Cap Bars and solid top rolls on middle and back top rolls.

Roberts also continues to offer its No-Oil Cap Bar and Saddle system for all three lines, now installed in more than 2½ million spindles.

ROBERTS M-1 SPINNING FRAMES MADE IN THREE WIDTHS

Where it is desirable to match frame widths already in the mill, Roberts makes and incorporates all of its design features of its new frames in standard 36 and 39 inch widths. All the ball bearing features and details are built into these wider frames.

The Roberts M-1 25 inch wide Spinning Frame permits 5 frames instead of 4 in a 25 foot mill bay, retaining 30-inch aisles and increasing yarn production 25% in the same place.

Creel designs have been arranged for the frames to handle 12 by 7 roving packages on as low as a 3-inch gauge frame. 10 by 5 double creels are designed for 3½ inch and larger gauges. In all cases, widths and heights of creel are not excessive with consideration being given for ease of creeling for the operators.

ROBERTS "TURNKEY" ERECTION SERVICE

Roberts "Turnkey" Erection Service is available in all 3 modernization arrangements: buying complete new spinning frames, buying modernized frames, or changing over the frames on your floor. In each arrangement, Roberts is entirely responsible for installation and performance.

By J. C. C.

► Can you believe it? Time again to wish readers of this here column the merriest of Christmases and happiest of New Years. My, my, doesn't tempus fugit? Seems only a few days ago that Ole S & R was busy with last minute 1956 Yuletide chores. And here it is time to get busy with this year's Xmas shopping, package wrapping, card addressing, etc. But we all enjoy it, don't we?

Yes, siree, our sincere wish for all of you—subscribers, prospective subscribers, advertisers, and prospective advertisers—is that you have a most happy holiday season and a very prosperous 1958.

So, now you've had it in case Ole S & R gets all involved telling you about some of our mail, etc.

► The editors tell us that the absence of the annual index of articles (which has since 1940 been published as a supplement to the December issue of TEXTILE INDUSTRIES) is not due to nervous tension or hysteria induced by Sputnik (whatever became of Spudnuts?) or any outerworld phenomena. TI's 1957 index will be included in the January, 1958, issue. So, if you need extra copies (they're handy for reference purposes), just drop a line to The Editors, TEXTILE INDUSTRIES, 806 Peachtree St., N. E., Atlanta 8, Ga., or if you wish, use the handy return card on page 179. We'll pay the postage.

► Speaking of indexing, TEXTILE INDUSTRIES has been chosen for indexing in the new *Applied Science & Technology Index* published by the H. W. Wilson Co. This index succeeds the "Industrial Arts Index" and will begin publication in January 1958. It will appear monthly except August and there will be an annual cumulated volume. TI appreciates having been selected for this index and feels that this will be good news for many of its readers.

► We've got to get the show on the road for 1958 and get old '57 off the track. Like the auto salesman said to the brand new 1957 car purchaser: "Come around in a couple of weeks and see the new 1958 models, and maybe we can work up a good trade on this old buggy."

And as the adding machine said, "You can count on me," you can count on TI to bring you the best of everything in textiles.

► We hope you like TI's ANNUAL PRODUCT PARADE & BUYER'S GUIDE you just received. This review of new equipment and supplies with available literature and buyer's guide—all divided as to mill processes—should come in handy every time you figure on modernization, new machinery, or where to get most anything for the mill.

► As for 1958, here's what's on the program. So look for it. Special treatments include: February—PUR-

TC
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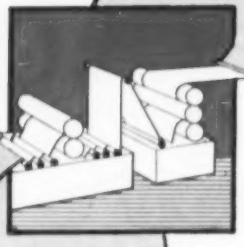

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FRANZ MÜLLER

More than 100 years ago

Franz Müller founded the company known today as Franz Müller, Maschinenfabrik, M.Gladbach. He eventually specialized in building textile machines and was the first one to construct a napper of rigid, horizontal design. Constant experiments proved, however, that adopting the planetary principle for the napper rolls produced much better results, and Franz Müller built the first fourteen-roller planetary napper - the proto-type of all similar nappers to follow.

In those days the first planetary napper startled the textile industry. Today the Franz Müller TRI-Napper has conquered the world's largest textile markets.

The FRANZ MÜLLER TRI-Napper offers you -

Higher production,
Better napping quality,
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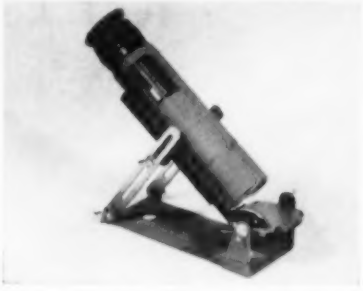
Shorts and Remnants

CHASING; April—KNITTING; June—TUFTED TEXTILES; August—SYNTHETICS; October — SOUTHERN TEXTILE EXPOSITION; November—WET PROCESSING; Mid-November — ANNUAL PRODUCT PARADE & BUYER'S GUIDE.

► Right now, we are worried about the aggressiveness of the textile industry. Here it is over six weeks since Sputnik, and we haven't heard of a good dyestuff or chemical firm that has come up with Sputnik ray repellent treatment. I believe we read in the "Manchester (England) Guardian" of an Italian who sold a warehouse full of suits to some good country folks with a guarantee of protection against satellite rays. While we haven't any special finishes to announce, we are certainly right on the job by telling you of the "Moon Watch Satellite Telescope" as offered by Edmund Scientific Co. of Barrington, N. J. Pictured here is a



5½ power, 12-degree Satellite Viewing Telescope for $10. And a big model with special mounting for $49.50 is also available.

► In June, 1957, we ran a translation of a Japanese mill man's report on a visit to the U.S.A. We thought it amusing, but a certain un-named competitive publication apparently was unenthusiastic. Their retort in a recent issue didn't mention TEXTILE INDUSTRIES, so we won't mention them.

► A recent talk by **George Dockray**, Exec. Ed. of TI, drew praise from **T. M. Forbes** of the Textile Education Foundation Inc. of Georgia who wrote " . . . . I was most impressed with your thorough knowledge of our industry and of its scientific problems and potentialities. It was a very valuable service to the Georgia textile mills. . . . "

(Continued on page 14)

Here's how Dixie Bearings, Inc. helped a customer save $2,000 in 60 days!

By removing bearing inventories from several departments to one centrally located stockroom, establishing records showing every application for every bearing, the bin number where these bearings are stocked and the quantity on hand, our engineers saved our customer money and made all bearings immediately available. Many identical bearings bought by several departments for many types of machines were found in quantities exceeding normal requirements. Many bearings were unuseable—unwrapped, dirty and rusty. A few of these bearings are shown above with one of our sales engineers who supervised cleaning, greasing and re-wrapping all bearings not in original boxes.

THE PAYOFF OF OUR SERVICE, ACCORDING TO OUR CUSTOMER, WAS A SAVING ON BEARING PURCHASES OF $2,000 IN LESS THAN TWO MONTHS.

This is not an isolated example of our services—surveys of bearing requirements, inventory control, application engineering, maintenance schedules and procedures are a regular and continuing part of our service to all customers to whom we supply replacement bearings. Ask how we can help YOU!

Providing bearing service in the South →

DIXIE BEARINGS, INC.

FLORIDA: Jacksonville • **GEORGIA:** Atlanta • **KENTUCKY:** Louisville • **LOUISIANA:** Baton Rouge • New Orleans
N. CAROLINA: Charlotte • Greensboro • **S. CAROLINA:** Greenville • **TENNESSEE:** Chattanooga • Kingsport • Knoxville • Nashville

and

in the North →

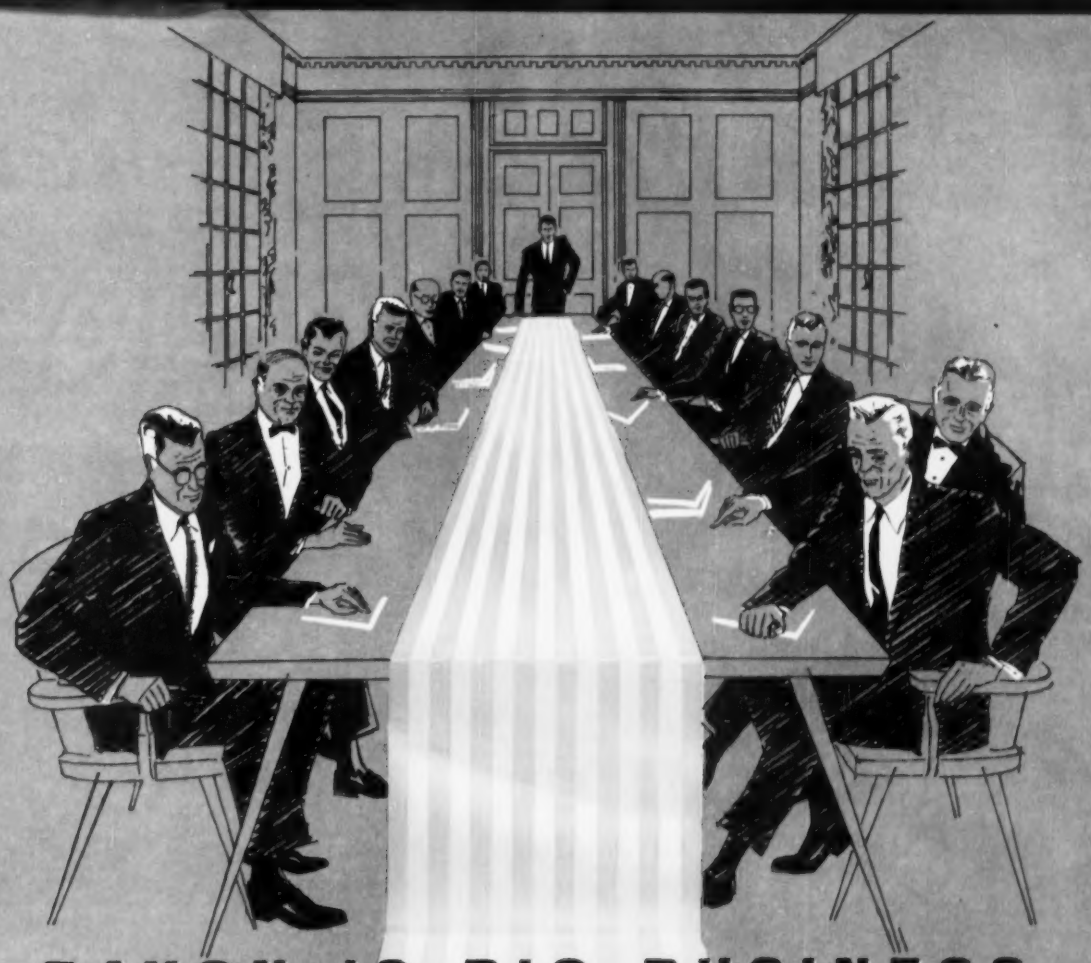
BEARINGS, INC.

OHIO: Akron • Canton • Cincinnati • Cleveland • Columbus • Dayton • Elyria • Hamilton • Lima • Lockland • Mansfield • Toledo • Youngstown • Zanesville
INDIANA: Ft. Wayne • Indianapolis • Muncie • Terre Haute • **PENNSYLVANIA:** Erie • Johnstown • Philadelphia • Pittsburgh • York
WEST VIRGINIA: Charleston • Huntington • Parkersburg • Wheeling • **NEW JERSEY:** Camden
NEW YORK: Buffalo, Balanrol Corp. • **MARYLAND:** Baltimore • **DELAWARE:** Wilmington

Unseen thread in the world's finest fabrics . . . Month after month, it's the practical influence of your Gulf Sales Engineer, direct link between America's textile mills and 1300 Gulf scientists and technicians. He can help you keep abreast of advances in petroleum science . . . give you timely answers to problems involving petroleum products . . . bring the resources of Gulf to bear on your specific problems: lubrication, maintenance, processing, fleet operations. He can help you improve your production and save money. Yet this Gulf Petro-engineering Service costs you nothing. Take advantage of it. Phone your nearest Gulf office and ask for a Sales Engineer.

Gulf Oil Corporation, Dept. DM, Gulf Building, Pittsburgh 30, Pa.

GULF



RAYON IS BIG BUSINESS

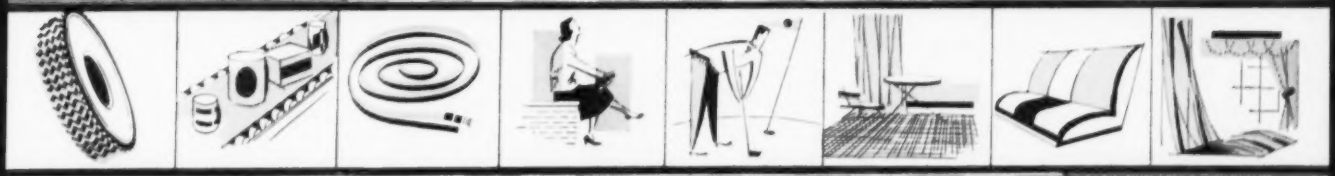
Rayon is big business today. Every hour of every day this country produces enough Rayon to encircle the world forty-five times—once every minute and fifteen seconds.

Rayon tire cord builds safety into today's high speed driving evidenced by the fact that every 1958 production automobile will ride on Rayon tubeless tires...in upholstery and automotive fabrics Rayon contributes to the strength, durability and appearance...carpeting for both home and office has longer life when Rayon is added...when added to men's and women's apparel fabrics, Rayon contributes to their eye-appeal and wearing qualities.

In countless fields of application, from heavy duty industrial textiles to shimmering fabrics in the smartest salons, the virtues of Rayon are recognized. In fact, Rayon production is as big as all other man-made fibers put together.

Antara Chemicals is proud of its part as a supplier to Rayon manufacturers of processing chemicals such as spin bath additives, clarifiers, sequestering agents, surfactants for finishes, softeners and lubricants, optical whitening agents, and fixing agents for dyes.

General Dyestuff Company, one of our country's oldest and most experienced suppliers of dyes and pigments, has a complete range of products for coloring Rayon in the mass, as well as Rayon piece goods and yarns.



ANTARA CHEMICALS · GENERAL DYESTUFF COMPANY

SALES DIVISIONS OF GENERAL ANILINE & FILM CORPORATION

435 HUDSON STREET · NEW YORK 14, N. Y.

ANTARA gaf

gdc

SALES OFFICES: New York • Providence • Philadelphia • Charlotte • Chattanooga • Chicago
Portland, Ore. • San Francisco • Los Angeles. IN CANADA: Chemical Developments of Canada, Ltd., Montreal

Stop hand oiling start increasing production with BIJUR AUTOMATIC LUBRICATION

Hand lubrication of textile machinery is obsolete. Leading textile mills, following the trend toward greater automation, have switched to automatic lubrication.

Bijur Automatic Lubrication makes costly, laborious, hand oiling a thing of the past. It insures more production from every machine by doing away with the major cause of textile machinery breakdowns—faulty lubrication. And still more productive time is added by eliminating down-time for hand oiling. Every bearing, even the most inaccessible, is fed the right quantity of oil at the right time.

Savings in oil consumption can exceed 50%. Work spoilage is avoided. Danger of fire is reduced and causes of accidents are removed. When you eliminate outmoded methods of lubrication, you will see immediate results in dollars-and-cents. 1032

Colorful, new bulletin, "From Fibre to Fabric," shows the practical benefit that Bijur Automatic Lubrication offers to the Textile Industry. Write for your copy.

BIJUR LUBRICATING CORPORATION
Rochelle Park, New Jersey

Pioneers in Automatic Lubrication

Shorts and Remnants

(Continued from page 10)

► Football is about over, and maybe members of the Southeastern Section of the American Association of Textile Chemists & Colorists were not too hot at picking winners, but they picked one this time. **Miss Paula Stevenson** (shown below), drum ma-

Atlanta Journal Constitution Photo

jorette at Georgia Tech, was picked for the second year for annual scholarship award by this group. Selection was made on basis of scholastic record, it says here.

► Nelson Getchell of the National Cotton Council tells us that TI for November, 1957, cut cotton consumption more than any of the synthetic fibers has been able to do. We reported (on p. 135) that projected per capita consumption of cotton for 1957, as reported by the Textile Economics Bureau, was 1.5 pounds below the 1956 level—a drop of 65 per cent, we said. We lost a decimal somewhere enroute—it should, of course, have read 6.5 per cent.

► Even good old TI gets mixed up now and then. A notice on new Chicago business rep, **Dick Hanrahan,** with an invitation to phone him at CEntral 6-6964 Chicago, went to Philadelphia advertising agencies. One of them, **Bill Dunbar,** Michener Advertising, wrote back "Shall we call collect?" Bill, it would be quicker and cheaper also to call **Jim Corgee** at MAdison 6-9145, Lansdowne, Pa., who is our new business rep in Philadelphia area.

TI is proud to have these men

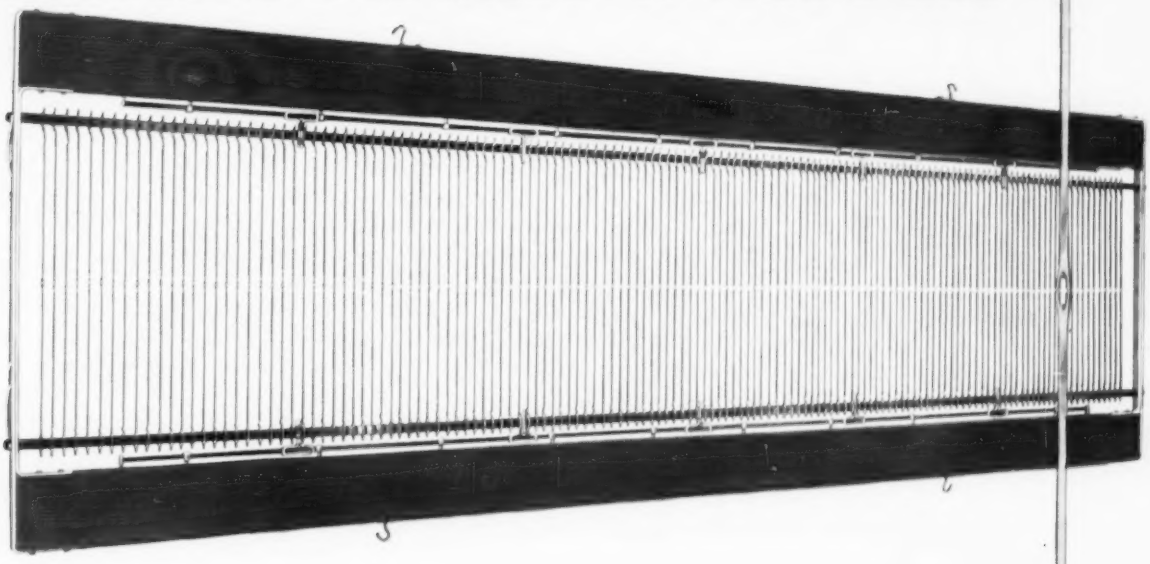
(Continued on page 22)

Quality WEAVING

NEEDS

Stehedco

HARNESS FRAMES & HEDDLES



Stehedco Harness Frames and Heddles Guarantee You The Quality You Need

Stehedco heddles are expertly made of finest quality spring steel, highly polished to gently handle your most delicate yarns, and designed to give you longer, trouble-free production than ordinary heddles.

Stehedco harness frames are carefully made of selected lumber, straight and knot-free, to meet the most exacting standards. Braces and hardware are designed to give smooth, consistently fine performance. Tempered steel rods give added life and more efficient operation.

Steel Heddle Sales Engineers, experts of the textile industry, are constantly alert to the needs of the textile mills, and Stehedco products are first with the latest improvements—after being field tested in large scale operations.

YOU CAN DEPEND ON QUALITY WITH STEHEDCO PRODUCTS

Stehedco
STEEL HEDDLE MFG. CO.
PHILADELPHIA 32, PA.
SOUTHERN SHUTTLE DIV.
GREENVILLE, S.C.
Southern

F-5702

Other Plants and Offices: Granby, Quebec, Canada • Lawrence, Mass. • Greensboro, N.C. Atlanta, Ga. • Textile Supply Co., Dallas, Texas • Albert R. Breen, Chicago, Ill.

"... a dead intercom system won't stop Si. ..."

Minor acts of nature such as floods, typhoons, and earthquakes won't keep the Seyco man from getting to your mill to render a service or study a problem.

If you have a tough mill problem and we can find the answer, then both of us will know the answer.

That's good for you and it's good for us.

Try us on your toughest!

Warp Sizing: *Softeners, Binders, Penetrants, Ty-In Penetrants, Shuttle Dressing, Waxes.*

Wet Processing Chemicals and Auxiliaries: *Dye Assistants, Penetrants, Rewetting Agents, Sanforized Fabric Oils, Detergents, Scouring Agents, Softeners.*

Niagara Twist-Setter: *Yarn Conditioning Penetrants.*

Seyco Warp Lubricator.

Headquarters for textile chemicals

SEYDEL-WOOLLEY & CO.

748 RICE STREET, ATLANTA, GEORGIA

SEYCO

Tab with tape-

save time...cut costs!

No pin-holes, no danger of damage to cloth when you fasten down the last lap of cloth with short strips of "Scotch" Brand Paper Tape. The pressure-sensitive adhesive sticks at a touch—and *holds*. Leaves no messy residue.

This "Scotch" Brand Tape is one of many paper-backed tapes in the "Scotch" Brand family. And there are super-strong tapes, super-thin tapes, transparent and colored tapes—all of them designed to do a specific textile-mill job, and do it right.

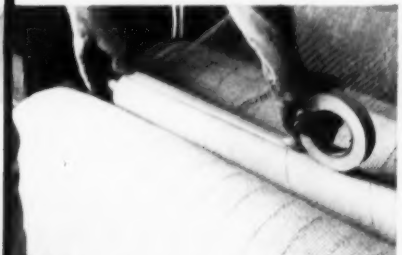
Minnesota Mining and Manufacturing—the 3M Company—has developed these tapes by working with the nation's leading textile mills over a period of many years. Result: the world's most complete line of pressure-sensitive tapes for the textile industry—tapes that are helping mills realize enormous savings of time, reductions in waste, increases in production and improvement of quality.

FREE BOOK!

20 pages crammed with facts and photos of how *you* can save with "Scotch" Brand Pressure-Sensitive Tapes! You'll want a copy for your reference files—*and* extra copies for other members of your organization. Write on your letterhead to: Minnesota Mining and Manufacturing Co., Dept. OU-127, St. Paul 6, Minnesota.

WARP ENDS are easy to start on section or loom beams with "Scotch" Brand Pressure-Sensitive Tape. Strip is applied over loose ends along shaft.

AFTER SLASHING, tape applied across warp holds ends parallel. 3 short strips prevent unwinding while it is being transferred to the next operation.



START WINDS of cloth with *tape!* Here, a "Scotch" Brand Pressure-Sensitive Tape with adhesive on both sides is applied to tube in strips or lengthwise.

REG. U.S. PAT. OFF.

SCOTCH BRAND Pressure-Sensitive Tapes

for the textile and apparel industries

PRODUCT OF 3M COMPANY RESEARCH

The term "Scotch" is a registered trademark of Minnesota Mining and Manufacturing Company, St. Paul 6, Minn. Export Sales Office: 99 Park Ave., New York 16, N. Y. In Canada: P. O. Box 757, London, Ontario.

Here's the reason

Speckling of ordinary unimproved vat dyes.
Uniformity produced with National Carbanthrene® Dyes.

It's simple! Vat dyes satisfy the young modern's desire for easy-care fabrics!

And to help you meet the demand, manufacturers have made remarkable progress in producing *better and easier to apply* vat dyes.

National's Carbanthrene® Dyes have been in the forefront of this evolution as a result of new and unique manufacturing methods that were developed by intensified National Aniline Research.

for the upsurge in vat dyes!

Typical of the cleaner, brighter dyeings produced with modern, fine-particle Carbanthrenes® are the extremely level, speck-free shades obtained in padding. In addition to uniformity and reproducibility, dye yields realized are frequently greater. Processing is less troublesome. There are fewer seconds. And dyes do not tend to agglomerate in storage.

Samples of these extraordinary, American-made dyes are available for your inspection. Your National Aniline representative will gladly demonstrate the superiority of the Carbanthrenes® in your processing.

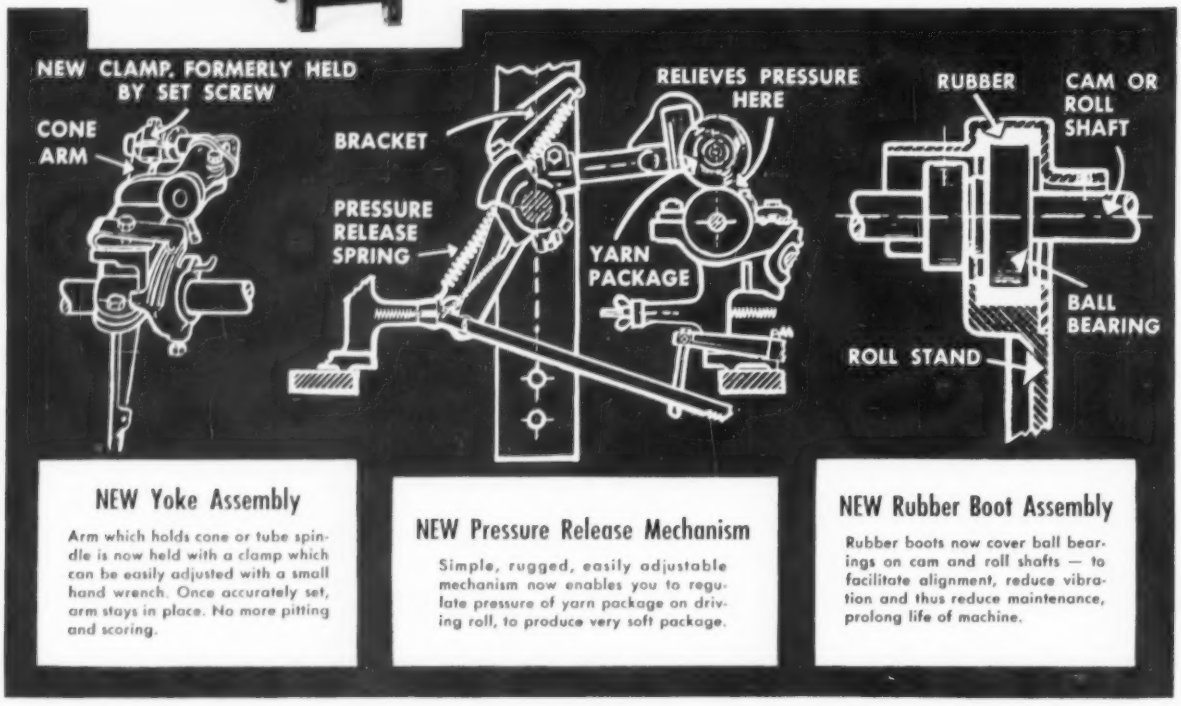
NATIONAL ANILINE DIVISION

ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK 6, N. Y.

Akron Atlanta Boston Charlotte Chattanooga Chicago Columbus, Ga. Greensboro Los Angeles
New Orleans Philadelphia Portland, Ore. Providence Richmond San Francisco Toronto

National Aniline Allied Chemical

FOSTER
MODEL 102 WINDER



NEW Yoke Assembly

Arm which holds cone or tube spindle is now held with a clamp which can be easily adjusted with a small hand wrench. Once accurately set, arm stays in place. No more pitting and scoring.

NEW Pressure Release Mechanism

Simple, rugged, easily adjustable mechanism now enables you to regulate pressure of yarn package on driving roll, to produce very soft package.

NEW Rubber Boot Assembly

Rubber boots now cover ball bearings on cam and roll shafts — to facilitate alignment, reduce vibration and thus reduce maintenance, prolong life of machine.

Foremost in Flexibility — Continuously Modernized

The Foster Model 102 produces cones with increased taper, assuring free delivery at the knitting machine. It was first to produce the open wind cones most suitable for knitting and will wind any type or count of spun yarn . . . will provide 9 different angles of wind from 9° to 18°, just by changing a few gears . . . can be readily equipped with a conditioning attachment . . . will produce a variety of cone tapers . . . will wind dyed yarn even when damp . . . can be built to wind 6" or 7" traverse knitting cones, warping cones, parallel tubes or dye packages — or short traverse cheeses.

Outstanding flexibility has made the Foster Model 102 preferred choice for many purposes for years. It holds its pre-eminence because our policy of continuous modernization constantly improves on its overall efficiency and its already long life expectancy . . . though improvement on some features may be impossible. A few relatively new improvements are illustrated herewith.

Send for Bulletin A-95.
Complete data — no obligation.

FOSTER MACHINE COMPANY

Westfield, Massachusetts, U.S.A.
Southern Office, Johnston Bldg., Charlotte, N.C.

Canadian Representative — Ross Whitehead & Company, Limited, 1475 Mountain St., Montreal, Que. and 35-37 King St., Toronto, Ont.

European Representative — Muschamp Textile Machinery Limited, Keb Lane Bardsley, Oldham, England

The trend continues....

...MORE PROFIT-MINDED MILLS ADOPT SACO-LOWELL GWALTNEY SPINNING

Proudly we add their names to the

HONOR ROLL of PROGRESS

Avondale Mills
Sycamore Plant
Sycamore, Alabama

Dominion Textile Co.
Valleyfield Plant
Valleyfield, Quebec, Canada

Dominion Textile Co.
New Yarn Mill
Valleyfield, Quebec, Canada

U.S. Rubber Co.
Winnsboro Mill
Winnsboro, South Carolina

Adelaide Mills
Anniston, Alabama

Denison Cotton Mill Co.
Denison, Texas

Marion Manufacturing Co.
Marion, North Carolina

Dan River Mills
Schoolfield Division
Danville, Virginia

Rockford Manufacturing Co.
Rockford, Tennessee

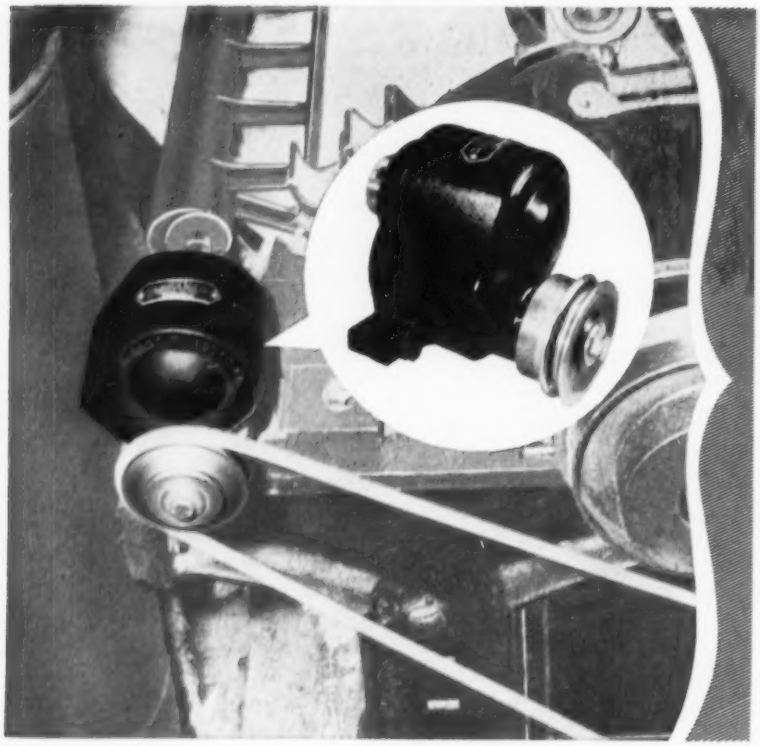
Join this group of over 85 mills operating more than 500,000 Spindles of Gwaltney Spinning . . . all are producing stronger, more even yarns of highest possible quality at important reductions in cost.

A Saco-Lowell engineer will be glad to discuss the "TREND TO GWALTNEY" with you and prepare a "FORECAST OF SAVINGS" based on a SACO-LOWELLIZING PROGRAM including Gwaltney Spinning for ...

SACO-LOWELL-SHOPS

60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD & SACO, MAINE; SANFORD, N.C.; EASLEY, S.C. Sales Offices: CHARLOTTE · GREENSBORO · GREENVILLE · ATLANTA



OUTSTANDING SUPERIORITY OF SOUTHERN STATES COMB BOXES PROVED IN NATION'S MILLS

More than 30,000 Southern States Comb Boxes have been placed in service during the past 7 years—equal to 35% of all the nation's cotton cards. Many mills have changed over 100%.

This overwhelming acceptance proves conclusively that mills can easily justify the small investment. Cardroom overseers quickly recognize the savings that result from their use: no oiling, cleaning or maintenance for the life of the unit; steady, even strokes to drive the comb with perfection; elimination of hot-running, leaky, rattling old-style boxes and their headaches.

Southern States Comb Boxes are furnished complete with an adjuster base for mounting on any make of cotton card. Bases are double tapped to permit rapid mounting on either right or left hand cards. Installation is quick and easy.

Let us show you with facts and figures how it has paid hundreds of mills to install Southern States ball-bearing, sealed-for-life, Comb Boxes; prove how much they will save you in one year. Write direct for a representative to call at your convenience.

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

Shorts and Remnants

(Continued from page 14)

solicit advertising for its pages. So our good advertisers and prospects will recognize them when they call, ole S&R asked the editors to let him use a little of the space normally al-

Corgee

Hanrahan

lotted to him for pictures of these reps.

We were successful, as you see, but only when we pointed out that after all many TI readers will have the occasion to see and talk with these fellows at the various textile shows and how much better it will be for all concerned if they have already met through the medium of this column.

Hard folks, those editors. Always looking out for their readers. We really wouldn't want it any other way, though.

► Incidentally, speaking of representatives, if any of you folks are having trouble finding somebody to take your money for your subscription to TEXTILE INDUSTRIES, or if you feel that it is too cheap and you should be paying more (which, of course, is the truth), here are a couple of fellows who will take your money and take care of all of your subscription problems, too. **Jim Robison** (left) is TI's circulation rep-

Robison

Williams

resentative in North and South Carolina and Virginia. **Herman Williams** (right) handles the same job for us in Georgia, Alabama, and Tennessee.

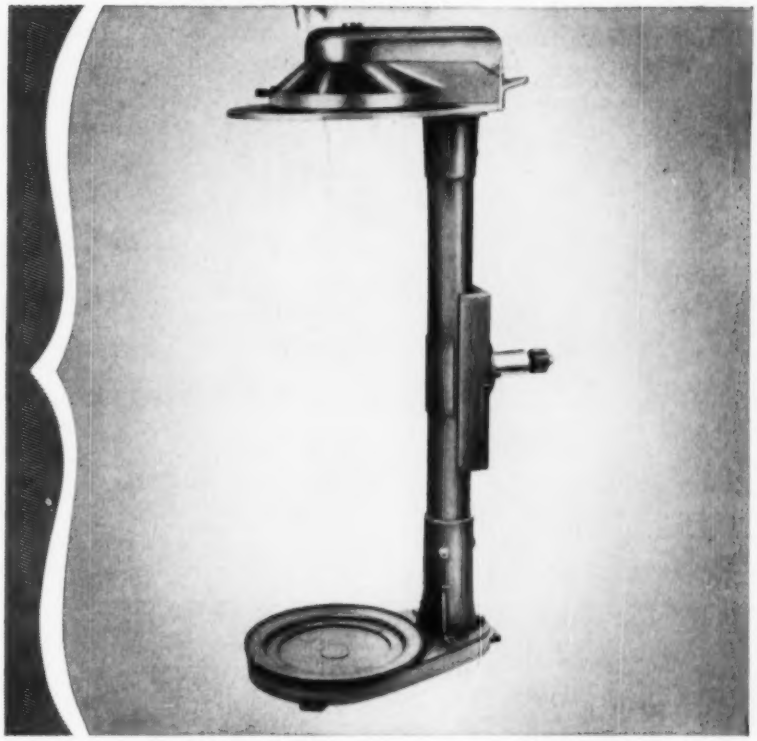
TI is fortunate to have these former mill men in the circulation department—Jim came to us from Gerrish Milliken Mills, Pendleton, S.

C., and Herman from Aragon (Ga.) Mills. We believe subscribers and prospects alike will appreciate this.

► If you will "bear" with us, here's our hunting picture of the year with **Dave Connor** (left) of Cooney & Connor (ad agency for Draper, Wildman-Jacquard, B. S. Roy, etc.) smiling just like he had killed a bear or something. Come to think of it, maybe he did. Looks like a bear anyway. Or could it be a lion?

Year Round Santa

It's not just because of the season, but TI is Santa Claus the year around with those free posters for the bulletin board. The editors will be glad to have suggestions for further posters, and they were pleased to have requests last month for more posters from **N. E. Williams,** U. S. Rubber Co., Winnsboro, S. C.; **R. A. Bannister,** Union-Buffalo Mills, Union, S. C.; **Ralph M. Rice,** Thomaston (Ga.) Mills; **E. A. Shepard,** Berkshire Hathaway, Inc., Providence, R. I.; also **Alexander Stewart,** Berkshire Hathaway, Inc., New Bedford, Mass.; **H. W. Boland,** Springs Cotton Mills, Ft. Mill, S. C.; **J. D. Pool,** Kendall Co., Charlotte, N. C., **J. H. Sanders,** Springs Cotton Mills, Chester, S. C.; **W. H. Taylor,** Kendall Co., Pelzer, S. C.; **C. E. Baxter,** J. P. Stevens & Co., Inc., Greensboro, N. C.; **H. T. Gilbert,** Chicopee Mfg. Corp., Athens, Ga.; **C. G. Stafford,** Controller, Aleo Mfg. Co., Rockingham, N. C.; **G. Delbert Pryor,** Pacific Columbia Mills, Columbia, S. C.; **Fred A. Powers,** Woodside Mills, Liberty, S. C.; **George W. Gage, Jr.,** Springs Cotton Mills, Kershaw, S. C.; **John R. Holley,** Mt. Vernon-Woodberry Mills, Inc., Baltimore, Md.; **John G. Averhammer,** Clinchfield Mfg. Co., Marion, N. C.; **D. A. Berini,** Aragon (Ga.) Mills; **Frank J. Haddon,** Pacolet Mfg. Co., Gainesville, Ga.; **John B. Cornwell, Jr.,**



SOUTHERN STATES' NEW COILER LINE HAS ALL ENGINEERING AND DESIGN FEATURES WANTED BY MILL MEN

Name the features you desire most and you will find them on Southern States' vastly improved coilers. To provide mills with a truly premium-quality coiler, every engineering and design feature wanted by mill men has been included.

Here are some of them: available for all can sizes . . . ball bearing throughout—head, shaft, and can table . . . cut tooth gears throughout . . . head and base may be rotated . . . strong tubular steel stand . . . precision-ground calender rolls . . . self-aligning pillow blocks on upright and calender roll shafts . . . fully adjustable can table . . . quickly detached coil spring roll-loading device. Others are fully described in our technical bulletin.

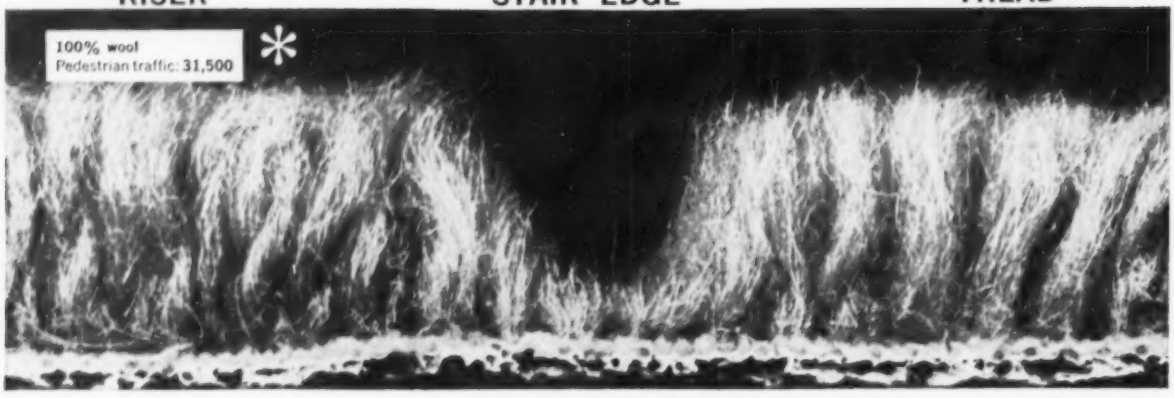
Southern States Coilers are designed for direct attachment to any make of card, left or right hand. Installation is rapid and economical.

Your mill can profit by this coiler that is quality-built throughout to operate at peak performance, with minimum maintenance, for years.

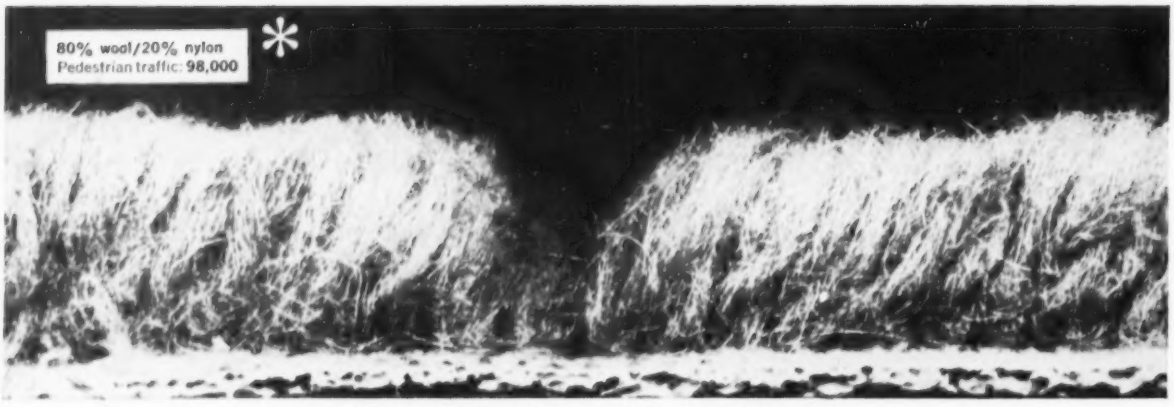
Get the facts from your Southern States representative or write direct to us for Technical Bulletin 203-a.

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

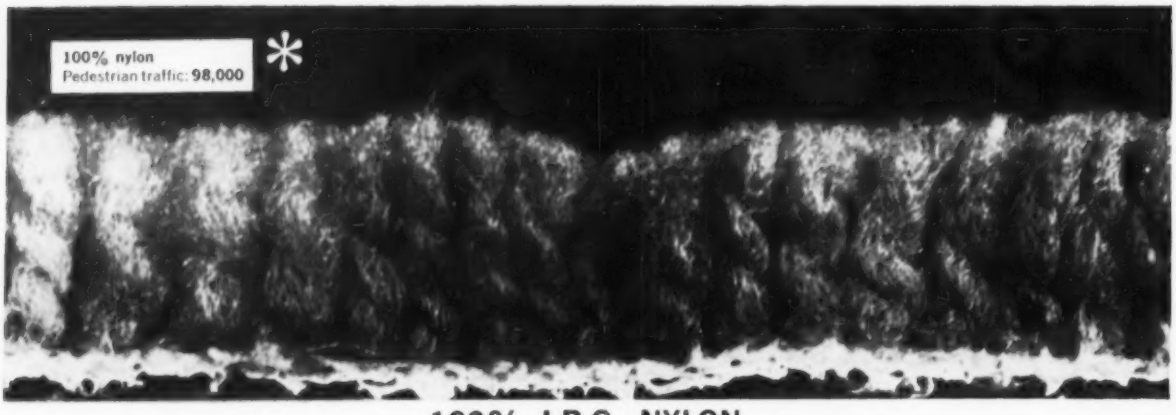
RISER STAIR EDGE TREAD



100% WOOL



80% WOOL/20% I.R.C. NYLON



100% I.R.C. NYLON

* Note that the 100% wool strip wore out almost completely with but one third the pedestrian traffic of the other two strips.

in carpeting, nothing adds wear like NYLON!

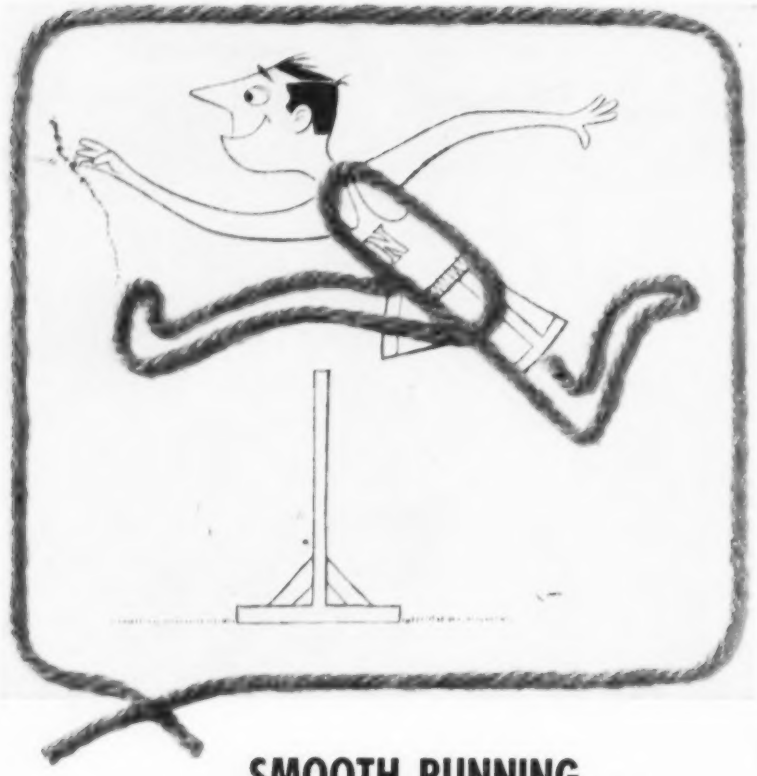
How does it wear? That's one of the most important questions consumers ask about carpeting. Permanent textures, higher recovery from crush, excellent resistance to matting, and greater resiliency are other important performance characteristics consumers want to know about. Nylon has them *all*, and they've been proved not only in the laboratory, but in *actual wear tests, too!* Flame-resistance? Nylon does not support flame. *No other fiber adds durability to floor covering like nylon!* The toughest possible traffic test proves . . . The Higher The Nylon Content—THE LONGER THE WEAR!

THE NEW Nylon Staple I·R·C

INDUSTRIAL RAYON CORPORATION, Sales Office: 500 Fifth Avenue, New York 36, New York · 627 Guilford Building, Greensboro, North Carolina

wear. . . Nylon outwears wool and every other carpeting fiber known. In this test, identical*, unpadded strips of carpeting were laid on bare, rough steps in an industrial plant. Strips were rotated regularly. 100% wool broke down at 31,500 pedestrian traffic mark. 80% wool/20% nylon was still useable after 98,000 pedestrians. At same 98,000 mark, 100% nylon shows virtually no wear.

*strips of carpeting were identical except for fiber content.



SMOOTH RUNNING . . .

Like to hurdle high production costs . . . set new records for trouble-free spinning and twisting? Smooth-running National-Sterling Ring Travelers can put you on the right track!

Carefully made to meet the most exacting standards, National Travelers assure the ultimate in precision balance and uniformity of weight, dimensions, temper and finish. Their flawless performance consistently produces more pounds of first class yarn . . . at higher spindle speeds . . . with fewer ends down.

Whatever fibers you are running — cottons, wools, synthetics, or blends — it will pay you to let an experienced National-Sterling Engineer recommend the *right* traveler for your particular operation. For prompt service, write, wire or phone National Ring Traveler Company and Sterling Division, 354 Pine Street, Pawtucket, R.I. Southern Office and Warehouse: P. O. Box 293, Gaffney, S. C.

NATIONAL *Sterling*
RING TRAVELERS

F. L. CHASE, JR., Pres. & Treas. L. E. TAYLOR, So. Mgr.

FOR SPINNING AND TWISTING ALL NATURAL AND SYNTHETIC FIBRES

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Export Agent: A. M. ROMERO CORP., 350 Fifth Ave., N. Y. 1, N. Y.

Shorts and Remnants

Mills' Mill, Reeves Bros., Spartanburg, S. C.

► Since we are a magazine published in the good old South, we saved the request of **Robert E. Lee** of Union-Buffalo Mills, Union, S. C., for the last, except for one from a little farther South from **R. Laidlaw,** Cia Ind. El Salvador, S.A. de C.V. Mexico, D.F., who would like posters in Spanish, and this most complimentary one from **R. M. Stephens,** V.P. Dan River Mills Inc., Danville, Va., who writes as follows: " . . . Of course, we have seen many posters, but these hit more nearly to the heart of the problem that is an everyday operations supervisory job and we are impressed by them. . . " Thank you, Mr. Stephens. Especially do our editors appreciate your taking the time to give your opinion of this latest TI editorial first.

Electronic Slub Catcher

" . . . We are very much interested in this piece of equipment [Electronic Slub Catcher, Sept. '57] and would appreciate any additional information you might be able to furnish us, as to supplier, etc. . . . "

C. A. FOWLER
Purchasing Agent
Columbian Rope Co.
Auburn, N. Y.

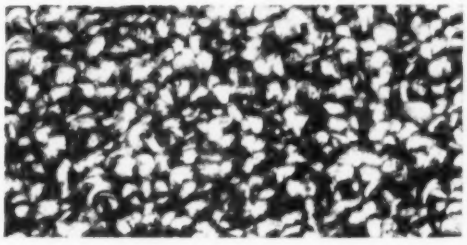
► Looks as if we caught a sleeper here. Above item from Qualitex, N. V., Enschede, Holland. No U.S.A. rep given. Got inquiries from many readers such as **Martin Van Delden,** Engr. Celanese Corp. of Amer., Rock Hill, S. C.; **Marion Teasley,** Time Study, Elberton (Ga.) Mills; **George P. Goble** (that's a familiar name), Supt. Ramseur (N. C.) Worsted; **Albert Eichner,** V.P. Greyhill Mfg. Corp., York, Pa.; **W. G. Brown,** Asst. Supt. Dominion Textile Co. Ltd., Montreal, Que., Can.

► While we are on those product inquiries, **C. P. Smith,** Supt. Prod. Oakdale Mills, Jamestown, N. C., wants more on new Meadows twisters (ad in Oct.); **George Haddad,** Mgr. Sedas Super S.A. Mexico D.F., wants prices and shipping date on Cocker warpers and slasher for 20s to 60s yarn; **C. H. McGill,** Engr. Chemstrand Corp., Decatur, Ala., wants to get on list for "Davis & Furber News" as offered (Oct.); **Chas. V. Good,** Prod. Mgr. Spartan Mills, Spartanburg, S. C., wants portable electronic moisture

Celanese Special Acetate Staples

"target fibers"—engineered for specific end-uses

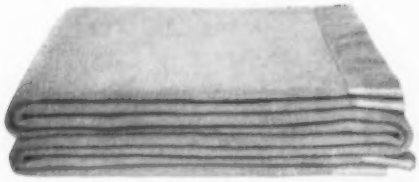
These special types are available in addition to the Regular Acetate Staple Fibers for apparel and home furnishings use. Developed by Celanese research, proven in use, these unique Acetate Staple Fibers are *specially engineered for top performance in specific end-uses.* Mills testify these are "fibers without headache," easy and economical in production. And Celanese not only delivers its fibers, but its technical knowledge as well.



TYPE HC. Celanese high crimp acetate, engineered for carpets. Absolutely tops in tufts. It can be permanently heat set. It takes superb color, cross-dyes beautifully. *Important:* HC enables mills to process coarser deniers on cotton systems for greater efficiency, better pricing.

TYPE K. Engineered specifically for pillows and comforters. This pure white, non-allergenic fiber is exceptionally light and resilient. It processes economically, efficiently, and is priced for volume consumption.

TYPE F. Engineered for mattresses, mattress pads, upholstered furniture, sleeping bags and other end uses. Pure white, mildew and moisture resistant, non-allergenic and comfortably resilient, it gives top performance at low cost.



TYPE D. Special acetate staple engineered for blanket type fabrics.

Most available in a range from 2 to 50 denier in various cut lengths and in bright and dull lustres. Celanese Corporation of America, Textile Sales Division, Charlotte, North Carolina.

District Sales Offices: 180 MADISON AVE., NEW YORK 16, N. Y.
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200 BOYLSTON ST., CHESTNUT HILL 67, MASS. • 819 SANTEE ST., LOS ANGELES, CALIFORNIA
Export: AMCEL CO., INC. AND PAN AMCEL CO., INC., 180 MADISON AVE., NEW YORK 16, N. Y.
Canada: CHEMCELL, CANADIAN CHEMICAL & CELLULOSE CO., LTD., 2035 GUY ST., MONTREAL

Celanese® CONTEMPORARY FIBERS

ARNEL® TRIACETATE · FORTISAN®-36 RAYON · CELACLOUD™ ACETATE · VISCOSE · RAYON

Sells sets
instead of singles...

Unit of sale steps up when
you pack related items together...
in a single H & D corrugated box
that fairly asks to be carried home.
Better see H & D.

HINDE & DAUCH

Subsidiary of West Virginia Pulp and Paper Company

AUTHORITY ON PACKAGING • SANDUSKY, OHIO
14 FACTORIES • 42 SALES OFFICES

Shorts and Remnants

meter (Moisture Register); **Jacob Sperber,** H. Sperber & Son, Phila., wants more on Sonoco single head spools; **S. O. Hamilton,** Abney Mills, Newry, S. C., inquires for further data on Reeves variable-speed motor drive for 10" x 5" J-3 frames; **C. Garnett,** Supt., Stokes Bros., Inc., New Braunfels, Tex., writes on Saco-Lowell 12" x 7" roving frame with drafting system for carpet yarns; **P. Laurin,** Pur. Dept. Regent Knitting Mills of St. Jerome, Terre, Que., Can., wants Adams stop motion for roving frames and National Vulcanized materials handling boxes; **Wm. J. Schwirian,** Mt. Vernon Mills, Inc., Baltimore, Md., inquires about Cook Machine's new J-box design (Oct.); **Richard Pascal,** Engr. U. S. Finishing Co., Hartsville, S. C., wants data on 4-cylinder accelerated dyeing machine of R. J. Dealy (Oct.); **Abraham Markowitz,** Pres. Red Knit Mills, Worcester, Mass., asks more on Sinclair Crystal Needle Oil; **Hilados Del Norte,** Monterrey, Mex., wants Halsey-Taylor Cooler Fountains (Oct.); **C. A. Beckwith,** Owner, Softspun Knitting Mills, Inc., Henderson, N. C., asks for more on Truscon Chemfast (Oct.); **W. L. Singleton,** Std. Dept. Columbus (Ga.) Mfg. Co., inquires about Louden automatic twin-fan ceiling cleaners and also on General Radio Strobotac for weave room; **LeRoy Rumpfe,** Mgr. Waumbec Dyeing & Finishing Co., Manchester, N. H., writes on Industrial Heat singeing machine; **E. R. Dicecco,** Supt. Saxon Mills, Franklin, Mass., asks for machinery to bleach cotton yarn (James Hunter); **Julian L. Baucher,** Cost Engr. Acme Cotton Products, Inc., Wauregan, Conn., writes for Hinde & Dauch "Little Packaging Library"; **Clovis J. Desmarais,** Dyer Florence Dye Wks., Woonsocket, R. I., asks for Du Pont "Dyeing of Orlon" and chemical data sheets of Nopco Chemical Co.; **Andrew Burnett,** Supt., General Textile Mills, Inc., Carbondale, Pa., inquires about Goodyear Chemigum Latex and for Firestone booklet on FR-S Latex; **Peter A. Roy,** Greetings Service Corp., Webster, Mass., wants booklet on Finnell "Scrubber - Vac"; Nopco Chem. Co. gets inquiries for Nylon Sizing from **D. W. Smith,** Amer. Enka Corp., Enka, N. C.

► So long till 1958. Thanks for listening in 1957, folks.

EXPERIENCE *is the Greatest Teacher*

Gaston County Dyeing Machine Company was founded in 1921 by R. F. Craig, well known textile executive and mill owner. Mr. Craig served as president of the company until his death in 1946.

The affairs of the company are now under the direction of the second and third generations of the Craig family. H. M. Craig, son of the founder, has been affiliated with the firm during its entire 36 year history. R. P. Craig, another son of the founder, has been connected with the firm for 15 years, and H. M. Craig, Jr., has completed 5 years of service. Important members of the executive staff are George Hacker with 20 years of service and his son, Gordon Hacker, with 10 years of service with the company.

A considerable number of production employees have been with the company since its beginning and many others have service records of 25 years and longer. Until the recent expansion program required the employment of additional skilled workers, the average service record of all employees was about 15 years. Most of the new employees are skilled men with previous experience in other plants doing work of a similar nature.

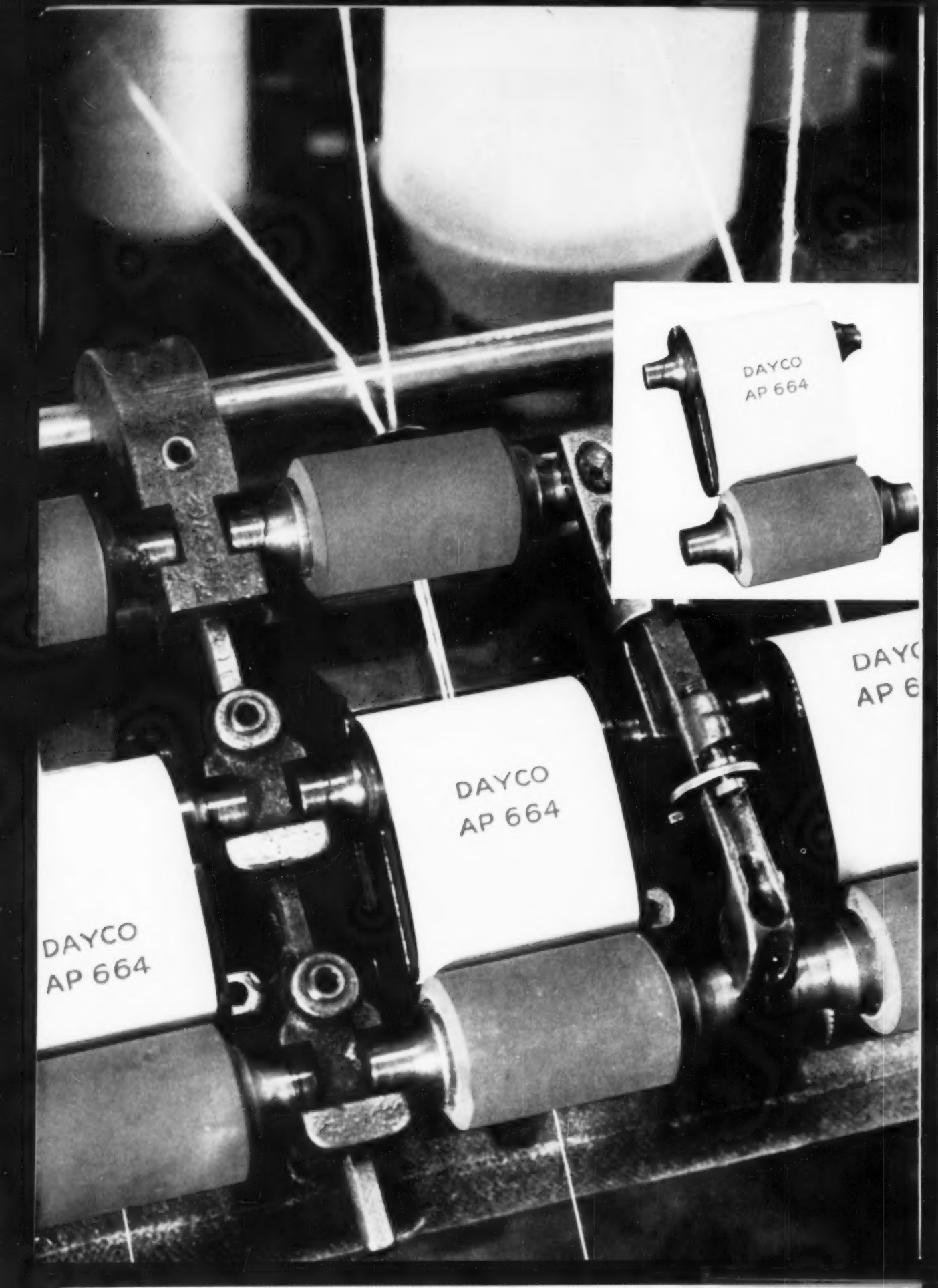
There is no Substitute for Experience

GASTON COUNTY DYEING MACHINE CO.

STANLEY, NORTH CAROLINA + ESTABLISHED 1921

DESIGNERS AND BUILDERS OF DYEING, BLEACHING, EXTRACTING AND DRYING MACHINES

Stainless Steel Fabricators — Process Tanks and Pipe


DAYCO
AP 664
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AP 664
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AP 6

Cut out lost time!

by using Dayco Cots and Aprons

PROFITS ARE MADE . . . or lost . . . right there in your drafting area. Put up with slow Monday morning starts, excessive ends down and overloaded clearer boards, and there go the profits. On the other hand, if you equip your drafting area with Dayco Aprons and Cots, you'll count out more production . . . with fewer man-hours . . . because you've eliminated the principal causes of slow-ups and down time.

FASTER START-UPS are yours with Dayco Aprons and Cots because they won't adhere to fibers . . . no matter how long you've been shut down. By the same token, they're unaffected by lubricants and oils in the natural fiber and, above all, stay dry even when the temperature and humidity get out of hand!

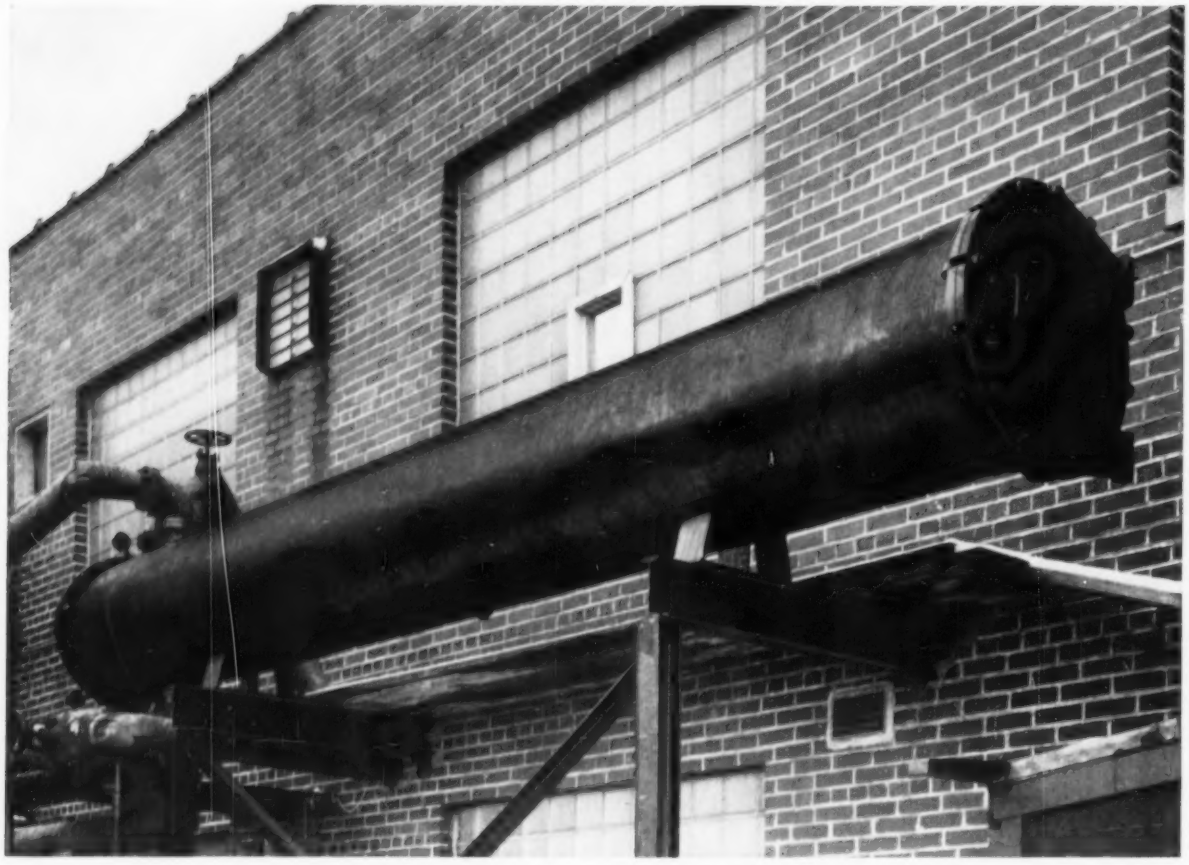
COUNT THE YARDS at the end of the shift and you'll be surprised at how many more you've run. Because Dayco Aprons and Cots have just the right coefficient of friction, they have a smoother, more economical drawing action that leaves all the long fibers in the yarn instead of depositing them on the clearer board. The result is stronger yarn, fewer ends down, and more yards per shift.

LONGER LIFE means that over the months, you'll find the Dayco Combination gives hundreds of hours more service. Dayco Aprons won't curl, become sticky or groove . . . won't stretch or take a permanent set. Neither will Dayco Cots pit, groove, or become glazed from hard wear. Naturally, with the longer life of the Dayco Combination, you'll save many hours of replacement time.

Take a second look at your profits and you'll want your Dayco representative to arrange a test with the Dayco Combination the next time he calls. Or write The Dayton Rubber Co., Textile Division, 401 S. C. National Bank Building, Greenville, South Carolina.

Dayton Rubber

Dayco and Thorobred Textile Products for Better Spinning and Weaving



P-K heat reclaimer outside dye house salvages BTUs from waste water to preheat incoming fresh water. Unit paid for itself in fuel savings in nine months.

HOW BLUE RIDGE TEXTILE CO. SAVES $8,000 A YEAR ON FUEL OIL

Heat that was going down the drain with waste water at Blue Ridge Textile Co., Bangor, Pa., is now saving this company 120,000 gallons of fuel oil a year. In addition, Blue Ridge maintains 180°F. water for dyeing operations with lower boiler capacity than was possible two years ago.

That was when the company installed a Patterson-Kelley Waste Water Heat Reclaimer. This unit extracts enough heat from spent dye liquor to preheat incoming fresh water to 120°—and save $8,000 a year on fuel costs. The preheated water is pumped to a P-K storage water heater where it is easily brought to 180° for the dye tubs.

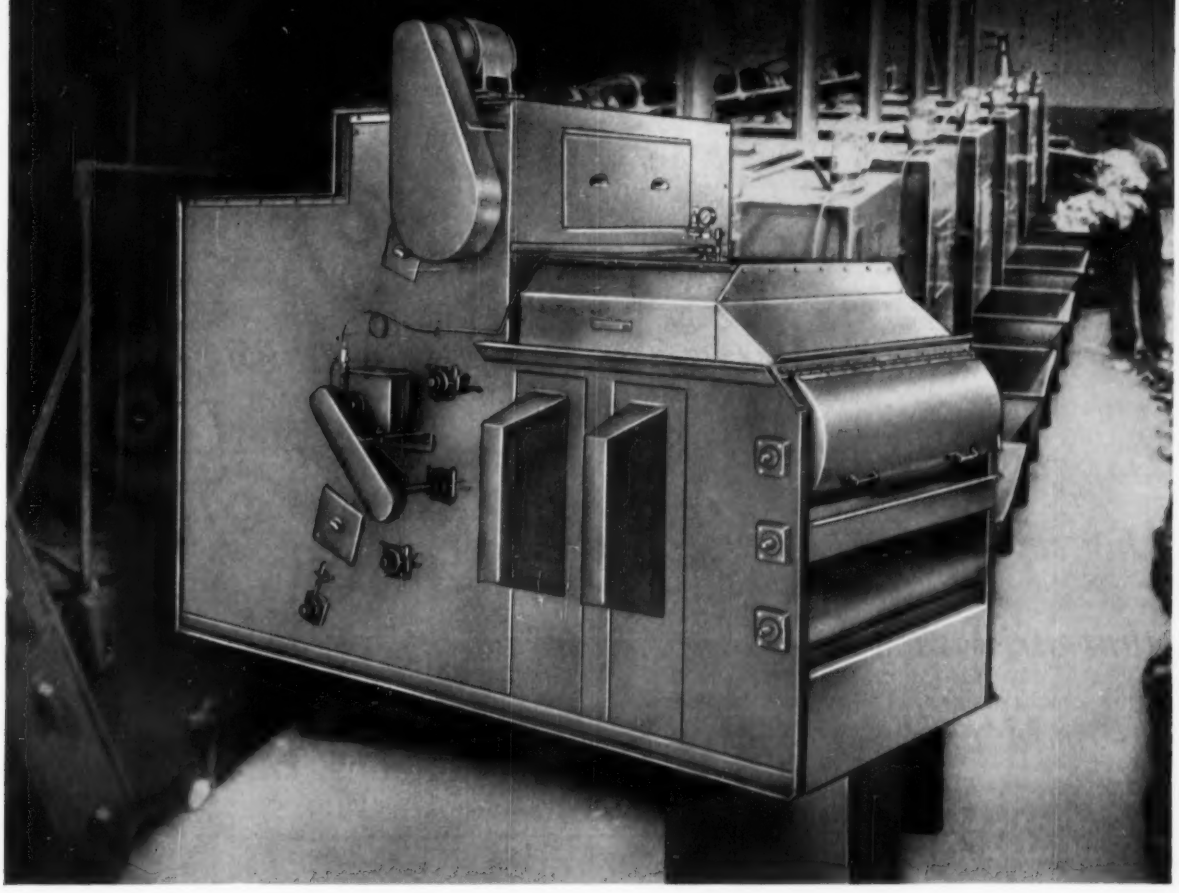
Substantial savings from more efficient heat transfer may be possible in your plant, too. P-K engineers can help you achieve them, because P-K specializes in designing and custom building heat transfer equipment. Write Patterson-Kelley Co., Inc., 2812 Wilson St., East Stroudsburg, Pa.

Patterson Kelley

Laundry and Textile Division

Waste Water Heat Reclaimers • Storage Water Heaters • Condensate Coolers
Instantaneous Heaters • Steam Mizers • Feed Water Heaters

HUNTER UNITINT ASSURES POSITIVE FUGITIVE DYE CONTROL



The Hunter UNITINT applies fugitive dyes to Fibers in a compact, fully enclosed, completely automatic unit. It is uniquely engineered to deliver greater tint uniformity and color accuracy; to reduce the quantity of tint used for any given color shade; and to eliminate tags and soggy batches.

ADAPTABLE — Unitint production rate (up to 1200 pounds per hour) can be accurately regulated to picker production or blending line delivery rate, and is automatically coordinated with tint spray. The Unitint proves especially effective in use with the Hunter Fiber Meter Automatic Blending System.

RESISTS CORROSION — All tinting is confined to the forward end of the machine. Stainless steel and other tint-resistant materials assure long parts life; make cleaning easy. Fully enclosed, automatic operation eliminates spills and mill housekeeping problems.

PROVED IN USE — Unitint installations in mills throughout the world have proven that the new Unitint is superior to all other tinting methods. You can prove it, too — *profitably* — in your own mill. Write today for the complete details.

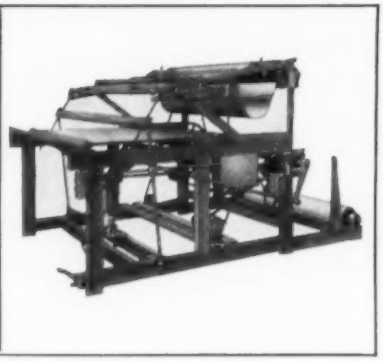
JAMES HUNTER

JAMES HUNTER, INCORPORATED • GREENVILLE, SOUTH CAROLINA

A SUBSIDIARY OF JAMES HUNTER MACHINE CO • NORTH ADAMS, MASSACHUSETTS

HIGH PILE NAPPER

For looped knitted goods used for linings and simulated fur fabrics. Better finishing results with fewer operations



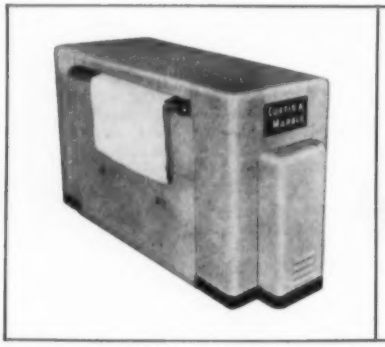
M-125 CLOTH FOLDER

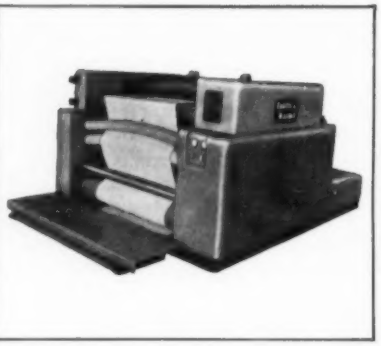
Less floor space; less moving parts with new electro-dynamic brake. Up to 8" drop plus power unrolling

Your alertness to the technological advances made in our textile machinery helps you to keep ahead of competition. New Curtis & Marble cloth finishing machines give you more production per man hour—better quality finishing. Our suggestions often improve cloth room operation and thus strengthen your competitive position. A talk with us could prove mighty profitable to your mill.

M-125 BRUSHER

Better brushing at higher speeds and companion machine to M-125 Shear. 8 interchangeable cylinders completely encased





M-125 SHEAR

Most advanced Shear design in years for cottons. Gives top quality shearing at higher speeds. Reduces maintenance and operational costs

CURTIS & MARBLE MACHINE CO.

Serving the Textile Industry for more than 125 years

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102ND YEAR

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Your Industry Better

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● *Swift sells Soap* and prompt, courteous and resourceful *service* —from a wide network of Swift offices and warehouses located all over the country.

Your Swift man draws on experience that covers over a *half a century* of mill progress in the practiced skills of dyeing, fulling and scouring. That's why there's a Swift's Soap or Detergent for most any textile finishing job. Swift will help provide sure, skilled and *experienced* service *wherever* fine fabrics need the *right* treatment.

Ask your Swift man about the TITER TRIPLETS:

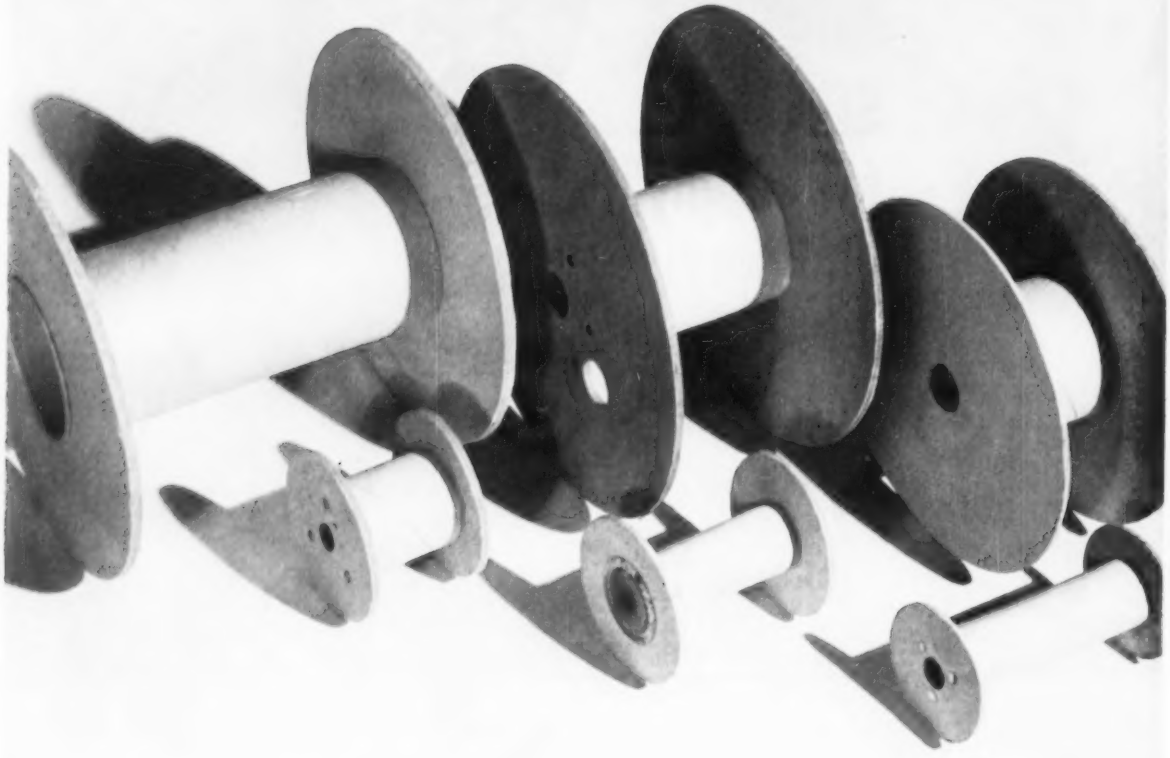
WHITE RIBBON (41°—42°C) A neutral high titer, all-purpose soap particularly recommended for high temperature sudsing. For wool, cotton or synthetic processing. Powder—92% anhydrous soap, Flakes—88% anhydrous soap.

T-25 (25°—28°C) Excellent for low titer fulling or for scouring fine or heavy worsteds. A neutral medium titer, red oil blended soap in flake form. Has 92% actual soap content.

VERTEX FLAKES (10°—12°C) Produced from high quality red oil. Quickly soluble in low temperature operations. Excellent for woolens. Provides good scouring at reduced steam costs. 94% actual soap content.

ONE TRIAL IS BETTER THAN A THOUSAND CLAIMS

When two heads are better . . .



SONOCO — source of special spools

SONOCO Spools are produced in an extensive range of sizes and types. Spool designs are engineered to meet your specific need—be it economy or use. SONOCO offers you years of experience in this field, plus the advantages of the most modern production methods.

Uniform quality materials are used in the manufacture of SONOCO Spools. Treated and printed heads are available. Certain type spools are adaptable to "knock-down" shipments. SONOCO Spools are ideal carriers for tape, braid, fringe, thread, yarn, rope and many other products. Get the spool to meet your exact requirements—from SONOCO!

Inquiries should specify head diameter, traverse, bore and barrel diameter.

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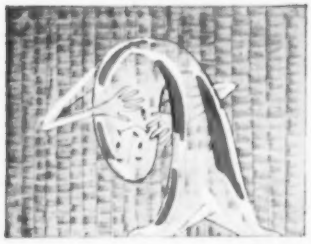
868

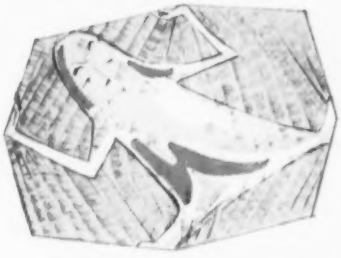
1. CLARITY



Penford Gums' clarity assures minimum masking on colored warps for fabrics which are finished without desizing.

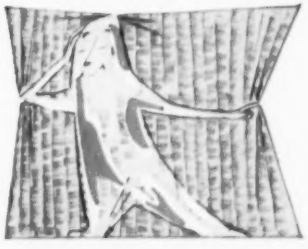
Which gums furnish
ALL FOUR FEATURES *for* **SIZING SPUN WARPS?**

2. STRENGTH



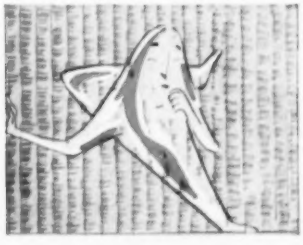
Penford Gums' extra-strength films provide additional abrasion resistance . . . insure maximum weaving efficiency.

3. ADHESIVENESS



Penford Gums' films show greatly improved adhesion to all types of both natural and synthetic fibers . . . minimize shedding and fiber mats at the drop wires and fuzz balls on the yarn.

4. FLEXIBILITY



Penford Gums' improved film flexibility permits superior weaving of difficult synthetic and natural fiber constructions at lowered relative humidities.

Penford Gums *furnish*

ALL FOUR

Penick & Ford's staff of Technical Sales Service Engineers will be pleased to show you where, when and how to use Penford Gums for sizing all types of spun fiber warps with your specific equipment.

(U.S. Patent Nos. 2,516,632; 2,516,633; 2,516,634)

MANUFACTURER OF DOUGLAS PEARL • CROWN THIN BOILING • DOUGLAS DEXTRINES • CLEARSOL GUMS FOR THE TEXTILE INDUSTRY

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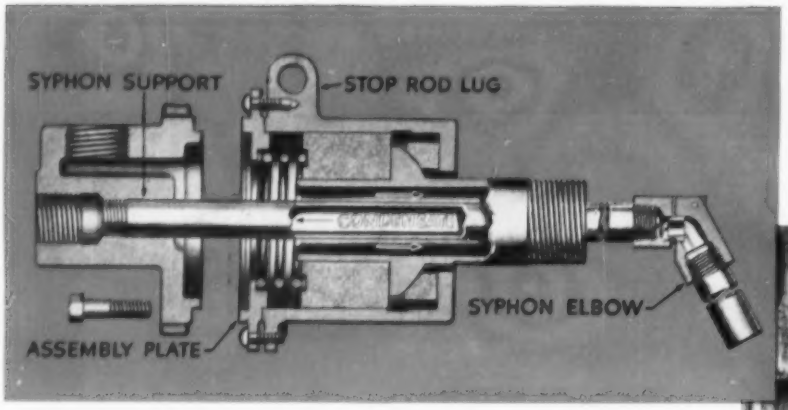
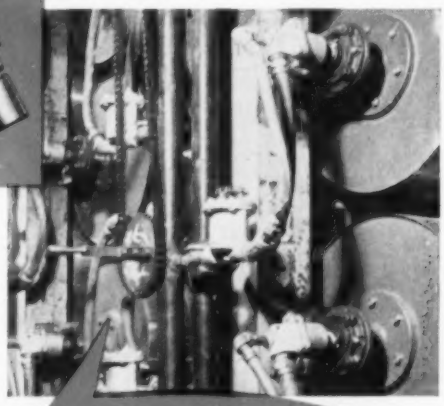


TYPE S-B2P Johnson Joint with Syphon Elbow. This is a completely self-supporting unit; the lug shown on body is for simple stop rod to keep joints from turning. Installation view shows these joints installed on dry cans.



These are the ones to use... { For 23" dia. Dry Cans and 30" dia. Slasher Cylinders

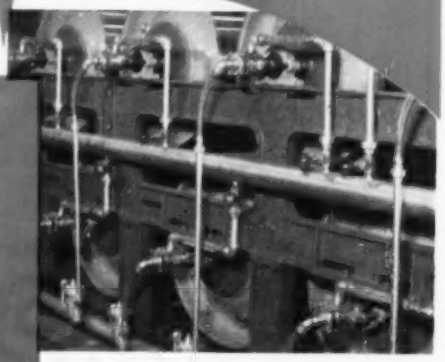
JOHNSON *Rotary Pressure* JOINTS with JOHNSON SYPHON ELBOWS

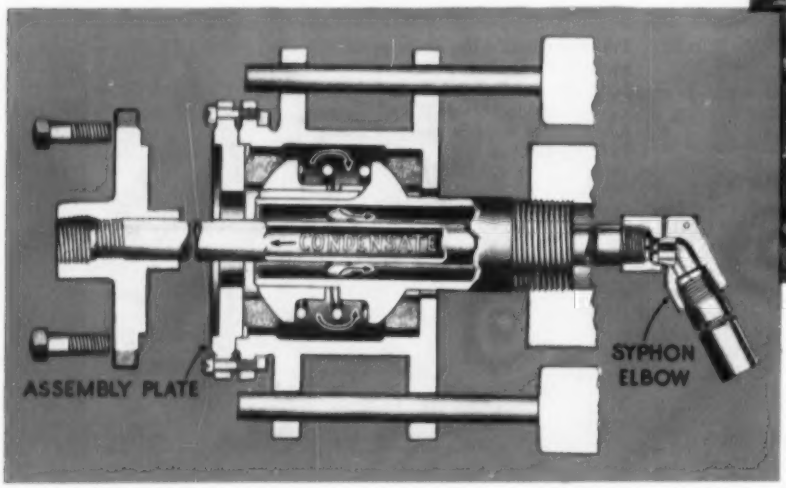
These two types of Johnson Joints have proved particularly suited for service on the newer 23" diameter Dry Cans and 30" diameter Slasher Cylinders. The Type S is completely self-supporting; the Type LJ is rod-supported from bosses provided by machinery manufacturers. Both types are completely packless, need no lubrication or adjustment.

Pictured with each joint is the Johnson Syphon Elbow, successor to the unwieldy curved syphon pipe. It hinges to pass right through the joint, seats of its own weight when in position, permits the use of two simple straight pipes for the syphon line. Special assembly plate is provided on joints so the head and syphon pipe can be removed without disassembling the joint.

Here's our offer—We will gladly furnish a pair of Johnson Joints for 90-day trial in your own mill, without cost or obligation to you. There are Johnson Joints for all operating conditions.

Write for full information





TYPE L-J5P Johnson Joint with Syphon Elbow. Has lugs on body for support rods, which carry all weight of body and connections, permit rotating assembly to "float" freely inside. Steam inlet is in side of body as shown in installation view of joints on slasher cylinders.

THE JOHNSON CORPORATION

815 Wood Street, Three Rivers, Michigan

Rotary Pressure Joints • Direct Operated Solenoid Valves

Ready now!

KLEINEWEFERS
Machines and Installations for
TEXTILE FINISHING

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OUTSTANDING CALENDERS AND PADDERS • «LAY ON ROLL» CHAINLESS MERCERIZERS
CONTINUOUS BLEACHING RANGES WITH NEW Multiplex WASHER
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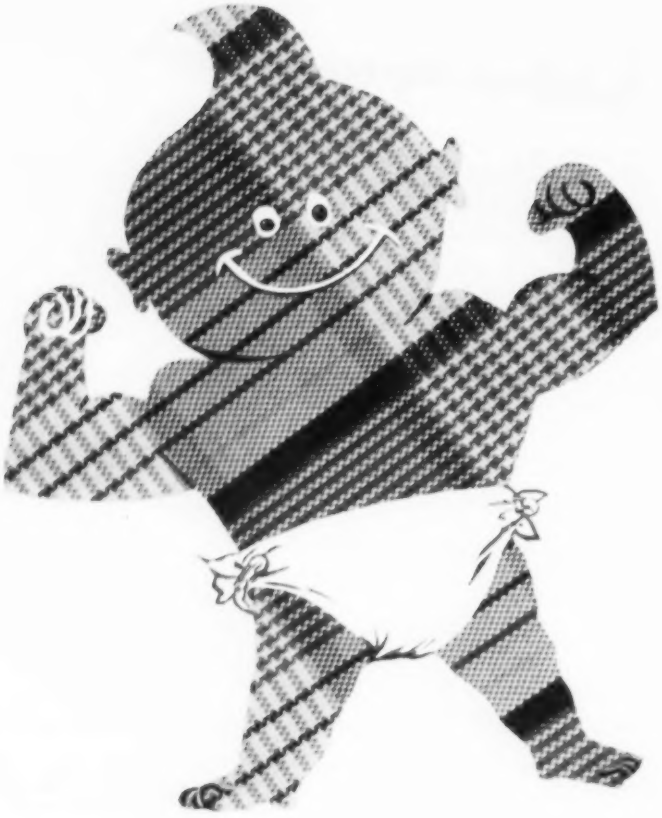
BURLINGTON ENGINEERING SALES CO. INC.
GRAHAM N.C. CABLE ADRESS BURENG GRAHAM. N.C.



I used to be a 7.2 pound weakling-- Wicaloid changed that fast !

Yes, sir, the big board quoted me at 7.2 . . . upholstery production costs ran high and profits ran barely black. I called for a miracle and Wica came through. Heavy sley gave way to a light application of Wicaloid. Production simplified, costs down, profit up!

Is "your baby" vacillating on the market? Ol' Doc Wica has a formula to cut costs and speed sales growth where you'd least expect the need for latex.

Wica

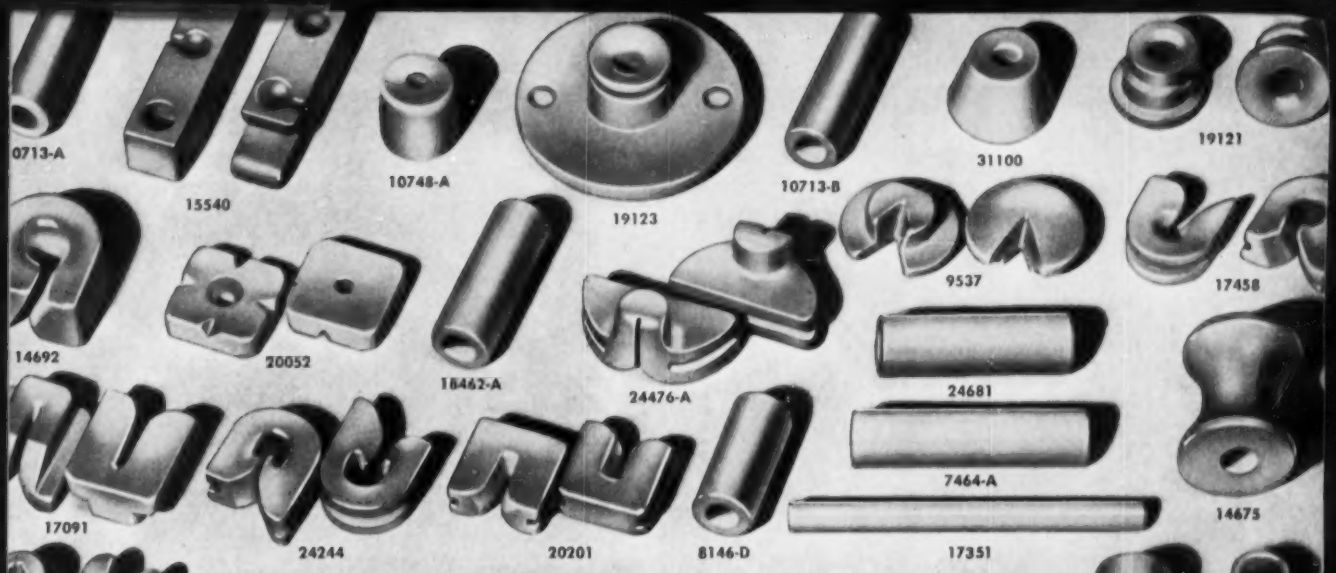
WICA CHEMICALS, INCORPORATED

OLD CONCORD ROAD • CHARLOTTE, NORTH CAROLINA

synthetic organic chemicals • textile specialties

latices • adhesives

SPECTRUM ACCURACY



Standard ALSIMAG® *guides*

in the **right material** for **your job!**

Here are a few of many standard AlSiMag guide designs ready for shipment

Advantages important to your mill are offered by AlSiMag:

Choice of Materials. A whole family of materials for the textile field, each with advantages for a particular application. Electrically conductive AlSiMag 193, for example, aids in the control of static.

Finer Quality. Homogeneous—no point of sudden failure. Smooth. Hard. Uniform. Dimensionally accurate. Help achieve more uniform tensions to improve product quality. Precision tolerances.

Longer Life. Tests on finer denier synthetic yarns at high speeds and tensions proved in every case reported to us that AlSiMag guides far surpassed those previously used. Fewer replacements; less down-time.

Controlled Finishes. AlSiMag guides can be supplied in a wide range of finishes —from 4 to 80 RMS micro inches—uniform from part to part and from lot to lot. Wonderful for lighter tensions!

TEST SAMPLES ON REQUEST.

SHOWN APPROX. ACTUAL SIZE

If you don't see the guides you need on this page, send us complete details. We can give you speedy service on custom designs. Custom samples for test can be produced promptly at reasonable cost. Write today.

A Subsidiary of Minnesota Mining and Manufacturing Company

AMERICAN LAVA CORPORATION

CHATTANOOGA 5, TENN.
56TH YEAR OF CERAMIC LEADERSHIP

SALES ENGINEERS: NEW ENGLAND: W. J. Geary, 27 Fairlawn St., Cranston, R. I., Williams 1-4177. NORTHEAST: J. S. Gosnell, 205 Walnut St., Livingston, N. J., 6-1260. NORTH CENTRAL: Minnesota Mining & Mfg. Co., 367 Grove St., St. Paul 1, Minn., Cedar 3071. NORTHWEST: Minnesota Mining & Mfg. Co., 320 Shaw Road, S. San Francisco 10, Cal., Plaza 6-0800. SOU. CAL.: W. L. Thompson, 6023 South Garfield Ave., Los Angeles 22, Cal., Raymond 3-6641. SOUTH CENTRAL: Minnesota Mining & Mfg. Co., 1221 Dragon St., Dallas 2, Texas. SOUTHEAST: James W. Crisp, 409 Buncombe St., Greenville, S. C., Cedar 9-8520. ALL OTHER AREAS: J. B. Shacklett, American Lava Corp., Chattanooga 5, Tennessee, AMherst 5-3411. REPRESENTATIVES: CANADA: Ian M. Haldane & Co., P. O. Box 54, London, Ont. ALL OTHER COUNTRIES: Minnesota Mining & Mfg. Co., International Div., St. Paul 6, Minn.

...how they get them that way at Pepperell

PEPPERELL MANUFACTURING COMPANY has paid dividends in every calendar year since 1852—the cleanest record in all American industry. This is a striking testimonial to the able management that has operated this textile manufacturing company for 105 years, and has made it a real leader in sheets and blankets, and other fabrics.

Assuring the production of "clean as a whistle" fabrics is a job Pepperell management has turned over to TRITON X-100, the water soluble, non-ionic surfactant with exceptional de-soiling power. Pepperell uses TRITON X-100 to remove mill dirt before the dyeing operation . . . and for scouring of the fabric after the finishing operation.

Want more information on the economy, soil removal and redeposition efficiency, and the versatile formulating possibilities of TRITON X-100? Write for full details.

Chemicals for Industry

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

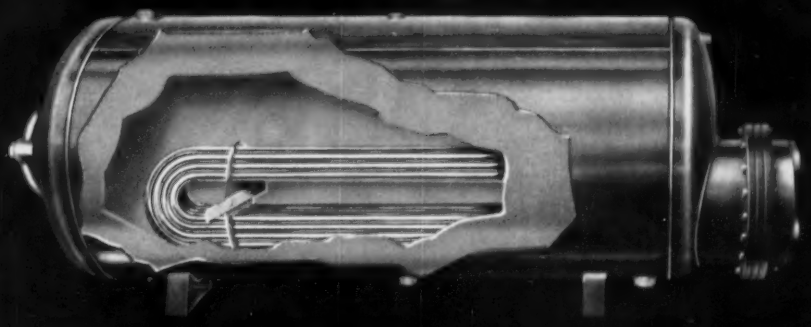
TRITON is a trade-mark, Reg. U.S. Pat. Off. and in principal foreign countries.

TRITON X-100

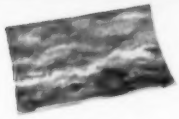
YOU GET

so much more at so little cost

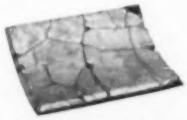
WHEN YOU CHOOSE



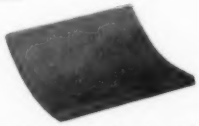
Patterson-Kelley cement-lined storage water heaters



Plain steel plate will corrode even under normal water conditions.



Ordinary cement linings tend to flake, crack and shrink, resulting in high maintenance costs.



Pre-Krete lined plate is still in perfect condition after exhaustive testing.

A P-K Pre-Krete* Lined Water Heater gives you double the life of a plain steel heater at only slightly higher first cost.

This long life of rust-free hot water service is made possible because Pre-Krete is a special pre-blended low soluble hydraulic cement formula. This durable lining is unaffected by extreme temperature changes, resists thermal shock and will not shrink, flake or crack.

Not only is your initial cost little more than for plain steel, but maintenance costs are appreciably lower. If lining repairs are ever needed, one man can make them quickly with a minimum of down time.

Moreover, Pre-Krete is inert to most substances and cannot contaminate the water or cause rust damage to fabrics.

Best of all, with a P-K Pre-Krete Lined Heater you get thermal designing that has maintained an unexcelled reputation for over 75 years, plus advanced fabrication techniques that meet all ASME specifications.

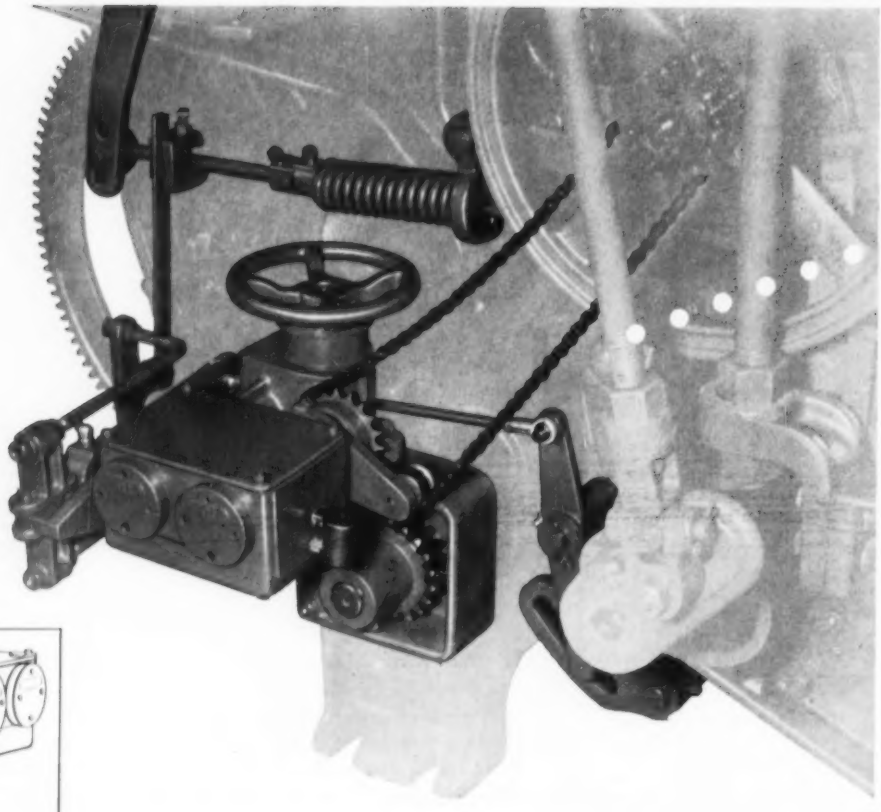
For complete details, write for Catalog 19 on P-K Storage Water Heaters. For information on field lining your existing plain steel vessels with Pre-Krete, ask for Bulletin 1012. The Patterson-Kelley Co., Inc., 2812 Warren St., East Stroudsburg, Pa. 114

*Pre-Krete is a registered name

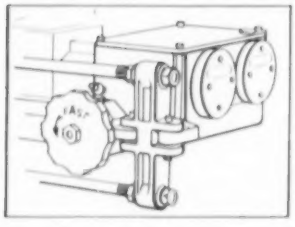
Patterson Kelley

storage water heaters • instantaneous heaters • convertors • fuel oil heaters • freon chillers and condensers

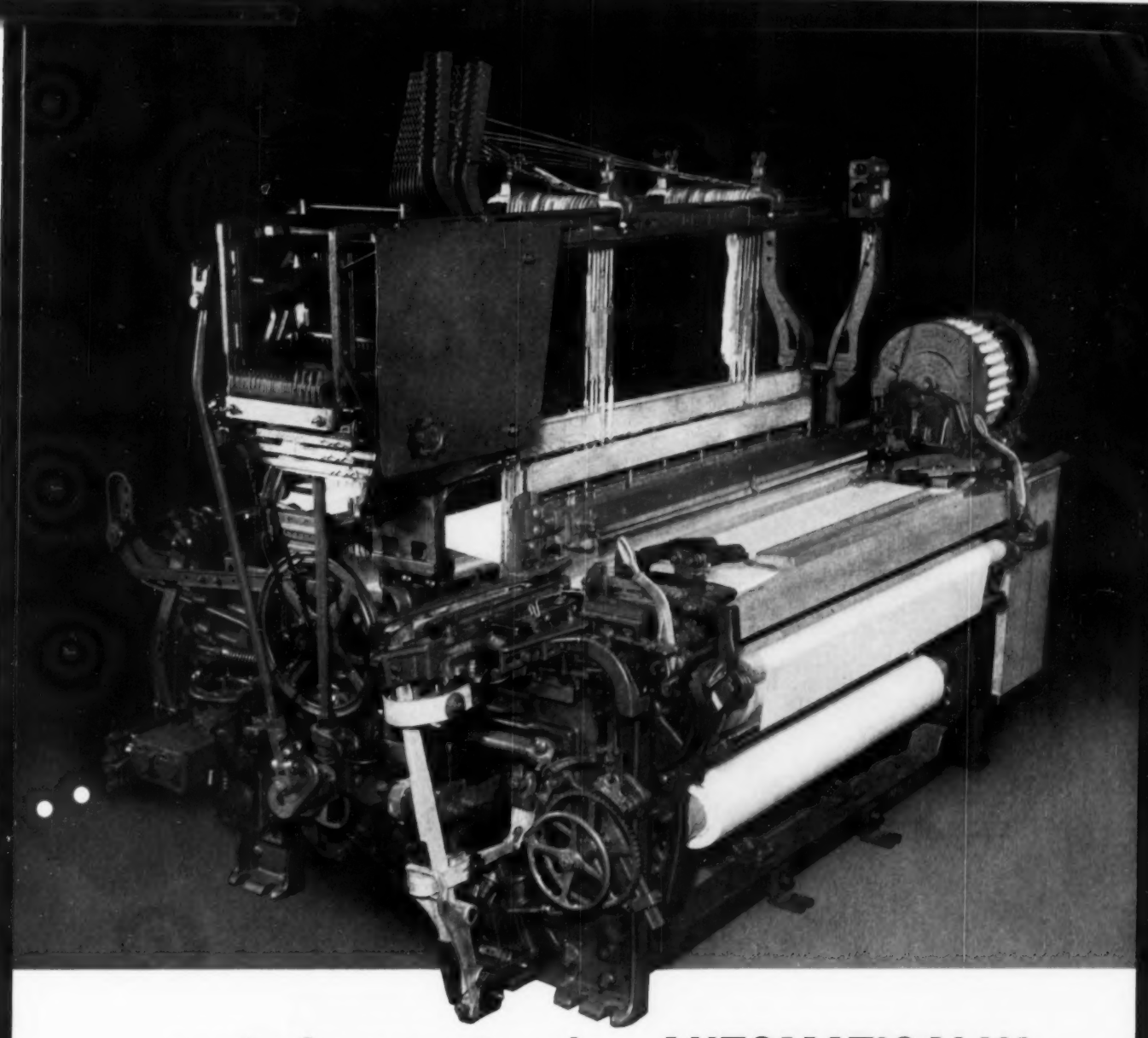
DRAPER TRU-TENSION LET-OFF . . .



One manual control for all settings



Compact mechanism . . . easily installed



. . . . controls yarn tension *AUTOMATICALLY* from full to empty beam

The Draper Tru-Tension Let-off controls yarn tension by means of a *positive, continuous drive* and a compensating friction transmission.

The "Tru-Tension", a compact, precision built mechanism eliminates many cloth defects commonly attributed to the Let-off.

Simplified design provides for fast, easy application. The new "Tru-Tension" may be applied directly to looms having the conventional #4 Automatic Bartlett. Looms equipped with other Bartlett Let-offs require a new Worm Wheel Shaft Housing.

Little or no adjustment is required from full to empty beam *once the initial settings are established.* On critical weaves, substantial savings are possible.

The Tru-Tension Let-off is currently available for X-2, XD, and XP model looms. For additional information on this and other Draper products, *consult your Draper representative.*

DRAPER CORPORATION

HOPEDALE, MASS.

Atlanta, Ga. • Greensboro, N.C. • Spartanburg, S.C.

What was your overseer of slashing doing last night?

Chances are, like so many textile execs today, he was burning the midnight oil. Probing for new ways to cut costs and hike quality on standard production runs, or looking for the answer on a difficult synthetic blend.

High humidity! Fuzz balls! Shedding! Whatever his headache of the moment, chances are doggone good that Staley's has been a source of help to him . . . an invaluable aid toward switching off his light sooner.

Like many other overseers of leading mills, experience has proved Staley's to be a name of trust and worth to him. A name representative of the finest full line of starches, gums and dextrins . . . comprehensive textile research . . . unsurpassed technical know-how . . . practical, cost-saving solutions to present day mill problems.

Whether in sizing or finishing . . . on cottons, woolens or the new synthetic blends . . . Staley's extensive backlog of experience stands ready to serve. Write or call the Staley's Technical Representative or the branch office nearest you for proof.

Staley's®

World's Largest Processor of Corn and Soybeans

A. E. Staley Mfg. Co., Decatur, Illinois

Branch Offices: Atlanta · Boston · Chicago · Cleveland
Kansas City · New York · Philadelphia · San Francisco · St. Louis

TERMACO PICKERS

Made and sold by the people who engineered and developed the original rubberized fabric picker

Exclusive Sales Agents

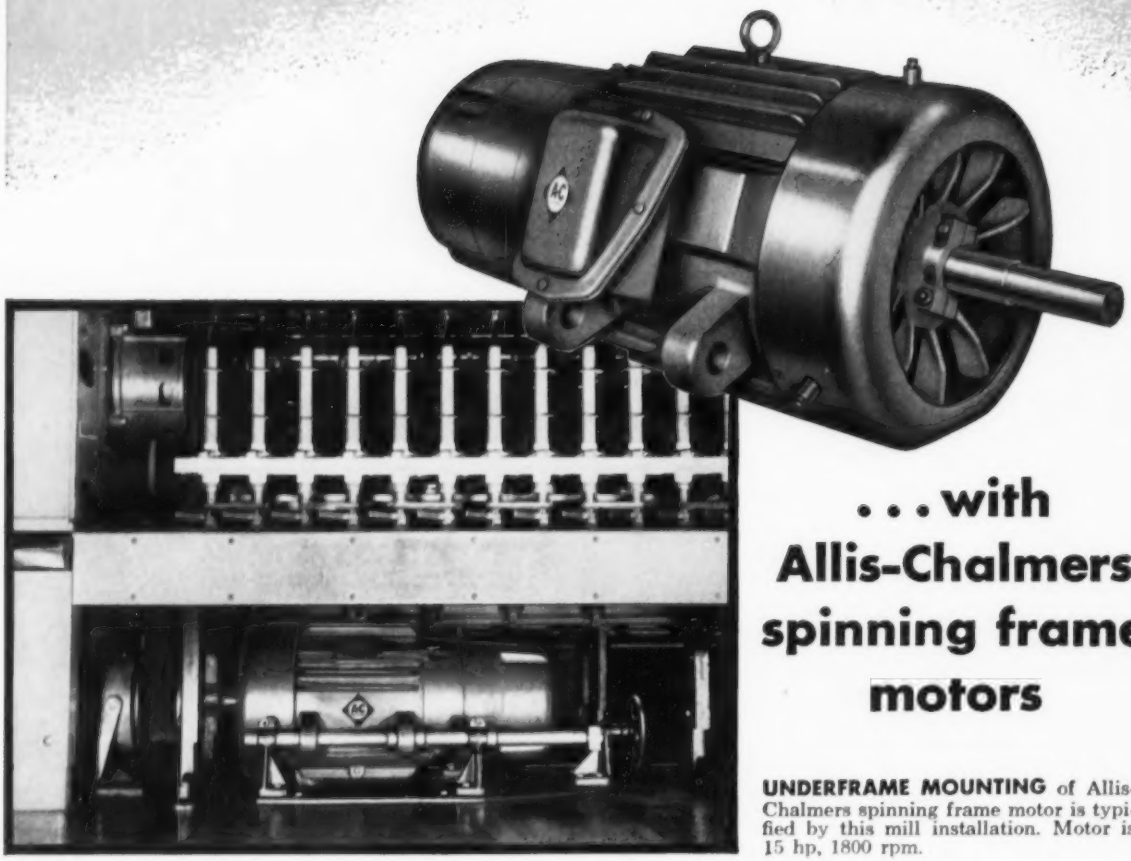
THE **TERRELL** MACHINE CO., INC., CHARLOTTE, N. C.

Made by

DENMAN RUBBER MFG. CO.,

WARREN, OHIO

Get MORE yarn output



. . . with Allis-Chalmers spinning frame motors

UNDERFRAME MOUNTING of Allis-Chalmers spinning frame motor is typified by this mill installation. Motor is 15 hp, 1800 rpm.

HERE'S a textile motor that will keep yarn moving on the newest spinning frames. It's the Allis-Chalmers air-cooled motor with totally-enclosed, deep-rib type construction.

Specially designed for underframe mounting, this motor is built to stay on the job even in the most lint-laden atmosphere. Here's why:

No lint can collect on the streamlined frame because a powerful air blast, directed over the motor surface from the large fan, continually sweeps all the exterior surfaces of the motor clean.

Double-shielded bearings are greaseable while in service. Frames need not be shut down for lubrication.

Cast-iron construction of frame, bearing and fan housings holds alignment true . . . adds to continuity of operation.

Belt tension adjustment is made easy by a convenient four-lug mounting.

Find out more about A-C spinning frame motors from your nearest sales office or distributor, or write Allis-Chalmers, General Products Division, Milwaukee 1, Wisconsin. Ask for Bulletin 51S8336.

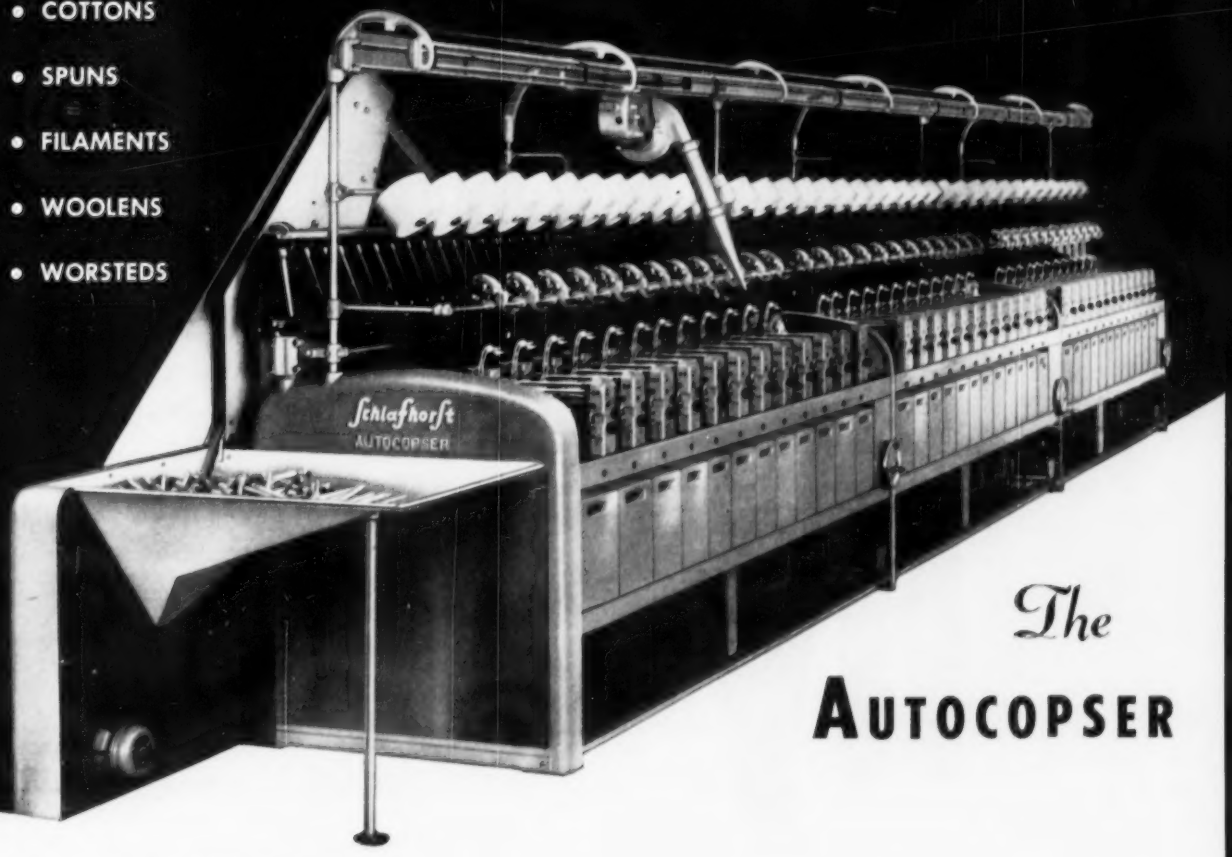
A-C ALLIS CHALMERS

A-5288

ALLIS-CHALMERS

THE ONLY HIGH SPEED AUTOMATIC FILLING QUILLER HAVING INDUSTRY-WIDE ACCEPTANCE

- COTTONS
- SPUNS
- FILAMENTS
- WOOLENS
- WORSTEDS



The **AUTOCOPSER**

SOLD AND SERVICED BY

THE TERRELL MACHINE CO., INC.

BOX 928 • 3000 SOUTH BOULEVARD • CHARLOTTE, N. C.

MANUFACTURED BY

W. SCHLAFHORST & COMPANY

M. GLADBACH • WEST GERMANY

CS_2 AND SODIUM Hy

Stauffer is a major source of supply of these essential textile chemicals. Stauffer was the first – is still the largest – producer of Carbon Bisulfide.

Carbon Bisulfide of purity exceeding 99.99% is shipped in tank cars of 5,000, 8,000 and 10,000 gallons from Bentonville and Roanoke, Va., Lowland, Tenn., LeMoyne, Ala., Chester, Pa., and Perry, O. (Drums of 5, 10 and 55 gallons from LeMoyne, Monongahela, Pa., and Richmond, Calif.)

Sodium Hydrosulfide in aqueous solution of high purity and highest practical concentration is now available in tank cars of 8,000 and 10,000 gallons from Chester, Pa., Roanoke, Va., Lowland, Tenn., and Dominguez, Calif. Also in 55-gallon drums from Chester and Dominguez, and in tank trucks from Dominguez.

For a continuous, dependable and flexible source of supply, make your arrangements with Stauffer.

stauffer means service

STAUFFER CHEMICAL COMPANY

380 Madison Avenue, New York 17, N. Y.

Prudential Plaza, Chicago 1, Ill. • 636 California Street, San Francisco 8, Calif.

Stauffer CHEMICALS SINCE 1885

TWO GREAT BEARING DEVELOPMENTS ROLLED INTO ONE!

PLYA-SEAL WIDE INNER RING BALL BEARING

Designed expressly for slow speed applications and wet or dirty operating conditions

New Fafnir Plya-Seal Wide Inner Ring Ball Bearings are a combination of two outstanding bearing developments. The most effective seal ever devised for retention of grease and protection against contamination, plus the famous Fafnir self-locking collar, for cost-cutting, twist-of-the-wrist bearing installation. This combination of features offers you several advantages . . .

Best protection yet against dirt, dust, steam, water, lint, other contaminants on slow to moderate speed applications. Contact-type, Plya-Seals seal out abrasive or corrosive material, seal in factory prepacked lubricant.

Less Maintenance — In many applications, non-relubricatable bearings may be used. They require virtually no maintenance time or expense. In other applications, where bearings receive hard or constant use, relubricatable types are available. They require only occasional greasing, even under severe conditions.

Longer Service life — Plya-Seals protect against premature bearing wear or failure. Contaminants cannot damage balls or races; sealed-in lubricant ensures against bearing "running dry".

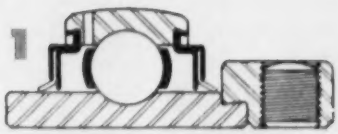
Simplified Designing — Bearing housings may be designed without incorporating separate housing seals. Plya-Seals provide full protection; make possible simplified, less costly, more compact housings.

Power Transmission Units incorporating new Fafnir Plya-Seal Wide Inner Ring Bearing

RAK and RAS Type Pillow Blocks | RCJ Type Flange Cartridges | Fafnir Flangettes

Write for bulletin containing complete specifications on Fafnir Plya-Seal Wide Inner Ring Ball Bearings and Power Transmission Units. The Fafnir Bearing Company, New Britain, Conn.

FAFNIR
BALL BEARINGS
MOST COMPLETE LINE IN AMERICA



PLYA-SEALS

As incorporated in the Fafnir Plya-Seal Wide Inner Ring Ball Bearing, the Fafnir Plya-Seal consists of a synthetic rubber-impregnated fabric sealing washer sandwiched between dished steel plates. Seal flares out, maintaining constant contact with ground outside diameter of inner ring. Years of service have proven Plya-Seals the most effective seal ever developed for ball bearings.

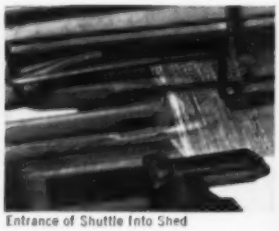
SELF-LOCKING COLLAR

Originated by Fafnir, this famous development has cut costs and simplified assembly throughout industry. Bearings slip onto shaft; are locked securely with simple twist of self-locking collar. No need for lock nuts, shoulders, sleeves, washers, or adapters. Positive binding action increases with use.

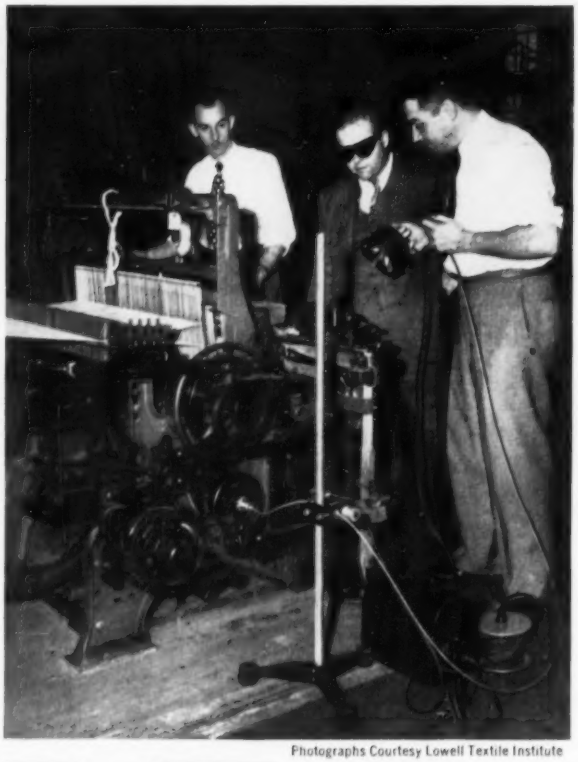
For Highest Efficiency
Less Maintenance
and Fewer Rejects on Any Loom

These GR Stroboscopic Devices Have Proven Invaluable in Hundreds of Mills

Boxing of Shuttle



Entrance of Shuttle Into Shed



Photographs Courtesy Lowell Textile Institute

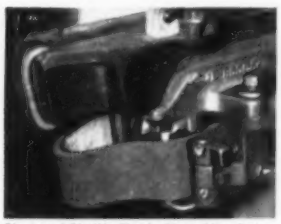
While the loom was operating at top speed these photographs were taken with a Type 1532-B STROBOLUME and a Type 1535-B Contactor and show exactly how these important loom operations are taking place. Maladjustments and worn parts are spotted quickly and simply.

Other equally important loom functions which can be seen with this equipment are:

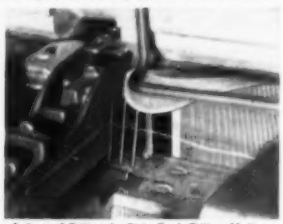
- √ Flight of Shuttle
- √ Behavior of Filling on Bobbin
- √ Loop of Filling as Shuttle Enters Shed
- √ Contact of Filling Feeler and Bobbin
- √ Transfer of Bobbins
- √ Action of Cutters
- √ Clearance of Protection
- √ Raising of Parallel Shoe from Parallel
- √ Behavior of Beat Up
- √ Flexing of Picker Sticks
- √ Checking of Mesh Gears

Correct adjustment and maintenance of any loom is simple with the STROBOLUME. Let us tell you how.

Write for STROBOSCOPIC EYES FOR INDUSTRY



Flexing of Shuttle Check Strap After Picker Stick Strikes on Forward Motion



Action of Filling In Side Fork Filling Motion

STROBOLUME
STROBOTAC®

Manufactured and Sold Exclusively by . . .

GENERAL RADIO Company 275 Massachusetts Ave., Cambridge 39, Mass.

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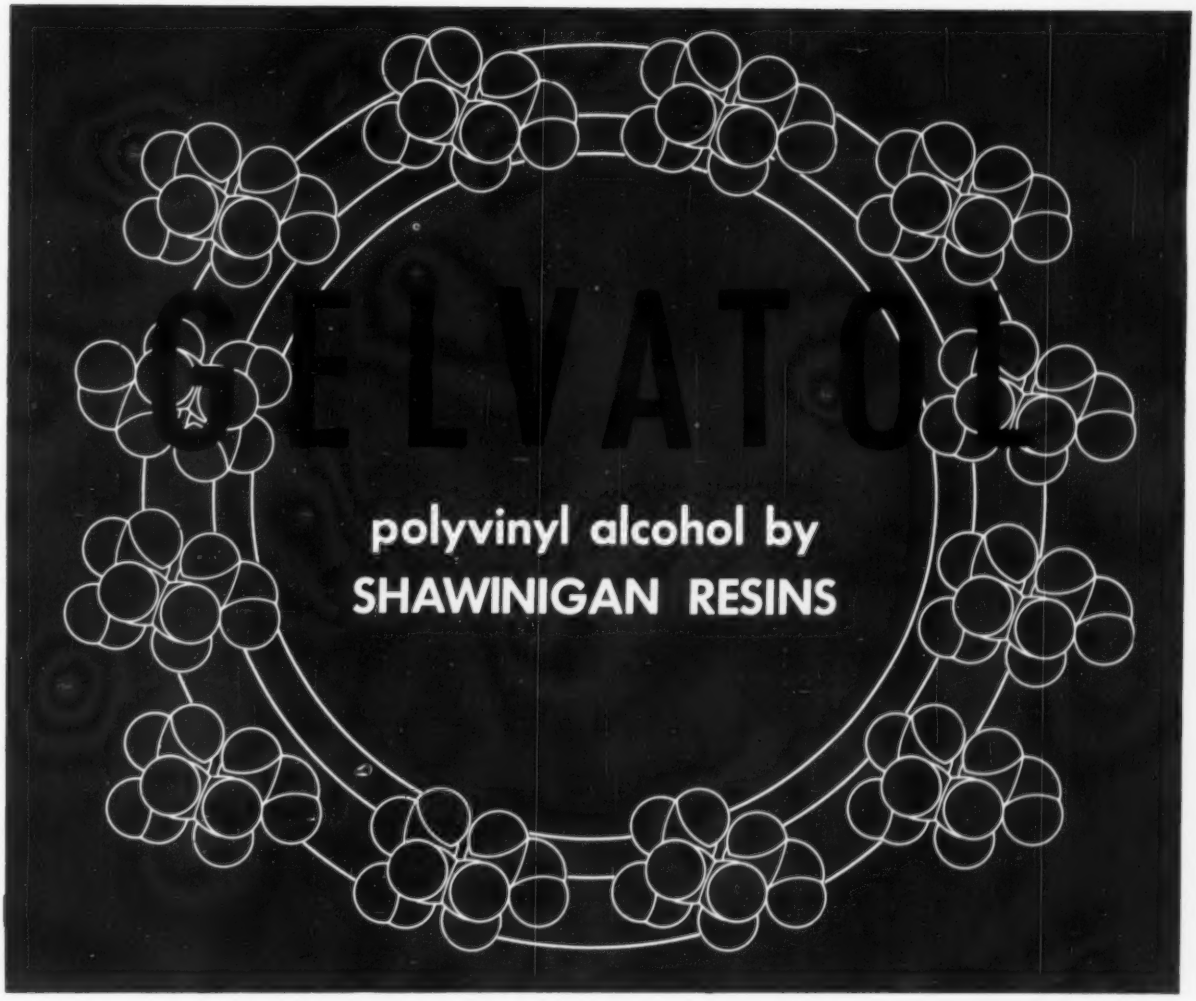
Prices are net, FOB Cambridge or West Concord, Mass.



available in 12 grades

Twelve grades of commercially proved GELVATOL now are at your disposal for more efficient, more profitable formulating. This series of resins is of unequaled quality and uniformity . . . features which have been proved on the production line.

Consider these advantages:

1. Notable uniformity from bag to bag, lot to lot.
2. Particle size minimizes product loss caused by dusting.
3. High bulk density reduces size of 50 lb. bag . . . makes it easier to handle—cuts storage space requirements.
4. High quality—less tendency for the resin to lump when added to water—you get clear solutions fast.

Standard grades of GELVATOL are suitable for all applications including adhesives, textile sizes, paper coatings, and films. What's more, the new, extremely low viscosity grades offer a unique combination of properties for specialty applications.

Whatever your needs, remember that in GELVATOL there is the *right* grade for you. Write today for full technical information and sales service, to Shawinigan Resins Corporation, Dept. 4212, Springfield 1, Mass.

SALES OFFICES: ATLANTA CHICAGO LOS ANGELES
NEW YORK SAN FRANCISCO

GELVATOL®— *polyvinyl alcohol by*

SHAWINIGAN RESINS

Colgate

SURFACE ACTIVE AGENTS

Have Many Uses In Textile Wet Processing

COLGATE
ARCTIC SYNTEX 036

A 100% Liquid Non-Ionic Surface Active Agent. For Use Where An Efficient, Economical Cleaning, Scouring, Wetting, Penetrating and Emulsifying Agent Is Needed.

Compatible with anionic, cationic and other non-ionic chemical substances, ARCTIC SYNTEX 036 is not inactivated by acids, alkalies, oxidizing or reducing agents; or by most organic ions. Stable for long periods at high temperatures. Will not form salts with metal ions. Very effective at low concentrations. Stable and effective in both hard and soft water.

CHEMICAL ANALYSIS:

	Per cent as received
Active Ingredient	99+
Moisture	0.5 max.
Ash Content	0.1 max.

STABILITY:

Hard Water	Unaffected
Metal Salts	Unaffected
Alkalies	Unaffected
Acids	Unaffected
Oxidizing & Reducing Agents	Unaffected

Recommended For Use In Textile Processes or Compounds: (1) Where emulsification and removal of oil and grease are desired or are problems. (2) In acid or alkaline solutions where other surface active agents may be inactivated. (3) In hard water or solutions of metal salts. (4) In combination with other anionic and cationic agents and other surface active or nonsurface active agents.

COLGATE
MENTOR BEADS

Heavy Gravity 60-lb. Bags

Low Density 30-lb. Bags

Spray Dried Neutral Alkyl Aryl Synthetic Detergent. Provides Excellent Wetting, Penetrating, Foaming and Dispersing Properties in Hot or Cold, Hard, Soft, Alkaline or Acid Waters.

A high-molecular-weight alkyl aryl sulphonate-type detergent, MENTOR BEADS has many uses in textile processing including: Wetting Out, Desizing, Kier Boiling, Degumming, Rayon "Boil Off," Bleaching, Fulling, Scouring, Dyeing, Washing After Dyeing, Print Washing, Finishing, Softening, Etc.

CHEMICAL ANALYSIS:

Active Ingredient		.40
Moisture		2.5%
Density or Apparent Gravity	Average Light	.20
	Average Heavy	.40

STABILITY:

Hard Water	Clear up to 550 ppm hardness
Acid—Boiling .25% in Sol. of pH-1	Stable after 5 hrs.
Alkali—Boiling .25% in Sol. of pH-13	Stable after 6 hrs.
Boiling Water	Stable
Atmospheric Oxidation	Stable

NOTE

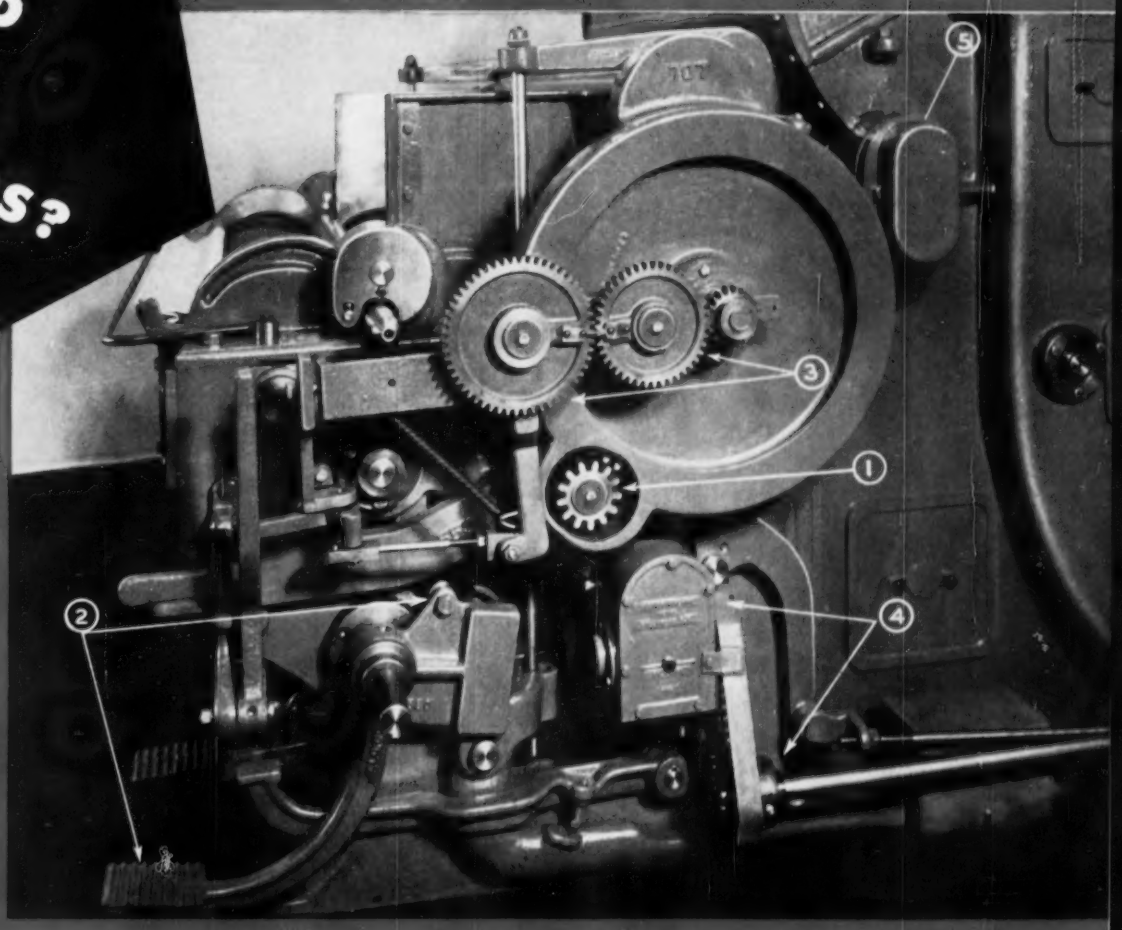
For more detailed information on either or both of these Colgate Products, write to:

Technical Service Division, Industrial Sales Department

COLGATE-PALMOLIVE COMPANY

300 Park Avenue New York 22, N. Y.

NEED NEW PICKERS?



1. Cut steel drop-shaft gear where sand-tooth cast iron gears are usually used. All spur gears on an Aldrich picker are cut.
2. The powerful starting pedal, providing tremendous leverage for positively engaging the drop-shaft gear.
3. The Stop-Motion is out where you can get at it for quick resetting. The guard is open at the bottom for easy access.
4. The really silent side-shaft drive, providing any desired speed changes. The drive and side-shaft run on ball bearings.
5. Self-aligning Oilite draw roll bearings.

AldricH MachinE WorkS

Greenwood, South Carolina

OFF LIMITS FOR LINT

Greenville Mills, Inc., Greenville, Mississippi. Air conditioning system designed by Mallett & Associates, Jackson, Mississippi; installed by James F. O'Neil Company, New Orleans.

AAF Auto-AIRMAT filters guard against lint at Greenville Mills plant (a subsidiary of Mohasco Industries, Inc.)

Lint has no way to turn in this modern plant of Greenville Mills, Inc., at Greenville, Mississippi. Wherever it is produced, it is immediately wrapped up by AAF's automatic lint filter—the Auto-AIRMAT. Auto-AIRMATS are installed on 24 air conditioning systems, cleaning 792,000 cfm of air.

Auto-AIRMAT is the *only* filter designed to remove lint fibres from the air and clean itself at the same time! Airmat filtering material, winding from roll at top of unit, moves automatically down the face of the filter, collecting lint all the way—re-winds into disposable roll at bottom.

If you have a lint *problem*, get the facts on the *lint filter*—AAF's Auto-AIRMAT. Call your local AAF representative or write for Bulletin 234.

AAF Filters and Precipitators

AAF Dust Control Equipment

AAF

American Air Filter COMPANY, INC.

275 Central Avenue, Louisville 8, Kentucky
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NEW!
Dramatic cost savings and higher bleaching quality...

SOLVAY

ACTIVATED HYDROGEN PEROXIDE BLEACHING PROCESS for COTTON

The new SOLVAY Activated Hydrogen Peroxide Bleaching Process for cotton produces goods of better quality at a considerable savings in bleaching chemicals. This savings in chemical costs may run as high as 50% and at the same time produce goods of increased purity, higher whiteness, lower color reversion tendencies, lower ash and metals content, and higher absorbency rates, even when moderately hard water is used. All of these desirable characteristics are realized without harm to the goods.

Extensive laboratory and plant tests have proved the practicability of this process which is now in successful, continuing full-scale commercial operation.

Details of process offered!

Without obligation, write for this new SOLVAY brochure. It describes the equipment and techniques and results you can expect, in setting up the SOLVAY Activated Hydrogen Peroxide Process in your operation. Application for a patent covering the SOLVAY Activated Hydrogen Peroxide Bleaching Process has been filed. The process is available to bleachers under a royalty-free license.

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Soda Ash • Caustic Soda • Calcium Chloride
Chlorine • Potassium Carbonate • Sodium Bicarbonate • Caustic Potash • Chloroform
Ammonium Bicarbonate • Cleaning Compounds
Ammonium Chloride • Sodium Nitrite • Aluminum Chloride • Snowflake® Crystals • Methyl Chloride
Monochlorobenzene • Para-dichlorobenzene • Ortho-dichlorobenzene • Vinyl Chloride • Hydrogen Peroxide • Methylene Chloride • Carbon Tetrachloride

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ALLIED CHEMICAL & DYE CORPORATION
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☐ Please send me without obligation your brochure, "SOLVAY Activated Hydrogen Peroxide Bleaching Process for Cotton."

☐ Have one of your representatives call to discuss it.

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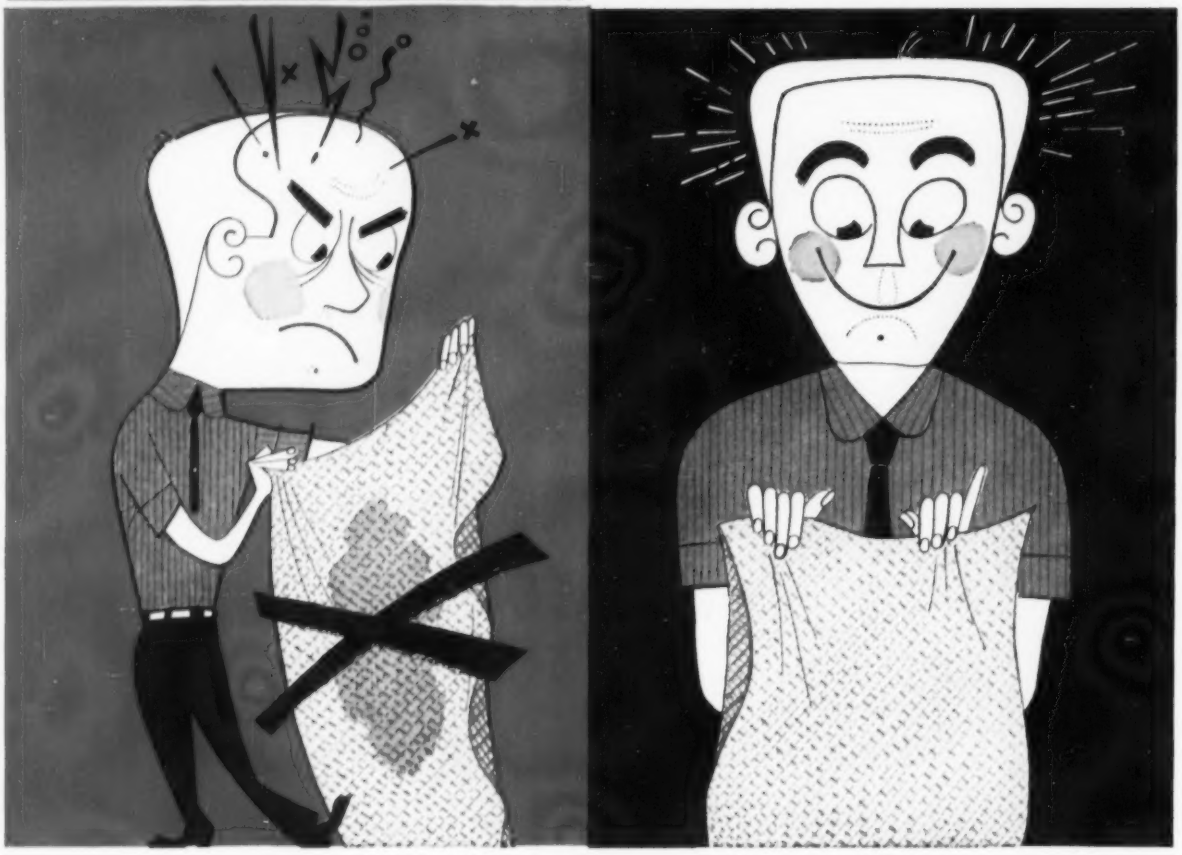
NAUGATUCK Lotols Ready-for-use latex compounds



Is Latex resinification discoloring your fabrics?

A Naugatuck LOTOL® may be the solution.

A LOTOL is a ready-to-use rubber or resin latex compound formulated to produce the exact results you want... on your particular application equipment and under your application conditions.

As the world's leading compounder and supplier of latex, Naugatuck is able to draw on its unexcelled experience—as well as its extensive lines of rubber and resin latices—to solve any problem concerning latex application.

Whether you employ latex compounds for sizing woven fabrics, for backing pile fabrics or tufted carpet, or for bonding curled hair, let a Naugatuck latex expert prescribe the compound that will do the best job for you... and provide the aging qualities you demand. His "prescription" will be given a LOTOL identifying number and can be "filled" at any of Naugatuck's three compounding plants strategically located at Naugatuck, Conn., Gastonia, N. C., and Los Angeles, Calif.

US RUBBER

United States Rubber

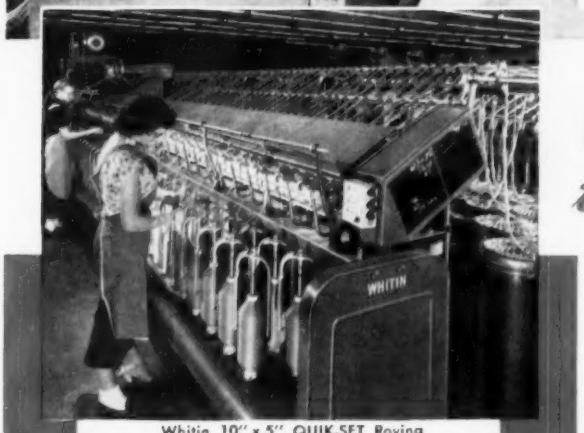
Naugatuck Chemical Division, NAUGATUCK, CONNECTICUT

Rubber Chemicals • Synthetic Rubber • Plastics • Agricultural Chemicals • Reclaimed Rubber • Latices

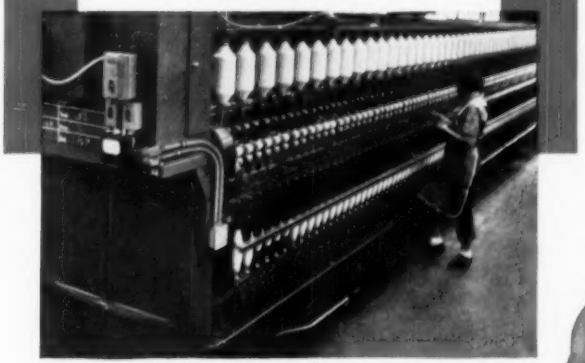
BRANCHES: Akron • Boston • Gastonia, N. C. • Chicago • Los Angeles • Memphis • New York • Philadelphia • CANADA: Latex Div., Dominion Rubber Co., Ltd., Montreal • CABLE: Rubexport, N. Y.

This installation of Whitin American System Roving and Spinning frames at Jantzen, Inc., Portland, Oregon, has resulted in savings in floor space, labor costs and power consumption.

Photo courtesy Sterling Electric Motors, Inc.



Whitin 10" x 5" QUIK-SET Roving frames at Jantzen, Inc.



Whitin SUPERFLEX Spinning frames at Jantzen, Inc.

Photos courtesy Jantzen, Inc.

Are you keeping machinery *that can't earn its "Keep"?*

...then you're losing the Profit Potential of WHITIN AMERICAN SYSTEM EQUIPMENT

The policy of harboring old out-dated equipment on the premise that it has a "few good years left in it" is dangerous! Regardless of how it may be *hidden* in the cost sheets, machinery that is not competitive is a liability!

Leaders in the industry — world-famous mills like Jantzen are quick to realize this. In the keenly competitive task of processing fibers for profit, they seek out the latest, most modern and most competitive equipment.

For production, quality, ease of maintenance and simplicity of operation, Whitin American System machinery — the ROTO-DRAFTER, the QUIK-SET Roving frame and the SUPERFLEX Spinning frame — offers unusual competitive advantages in the processing of worsted, synthetic and blended fibers.

To make your operation more profitable — make it Whitin!

The Jantzen Diving Girl — world famous symbol of quality on all Jantzen sportswear

For complete information, ask your Whitin representative — or write direct to us.

Whitin MACHINE WORKS

WHITINSVILLE, MASS.

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

Dazzling white whites—highly prized at the sales front, valued in the trade—can now be yours in wool, nylon, silk, acetate, many of the newer synthetics...and with the greatest of ease in measuring and handling! Calcofluor White RW Solution, newest addition to Cyanamid's Calcofluor Whites, may be applied like a normal dye; needs no special equipment; is readily dilutable to dyebath strength.

Available also in following forms:

CALCOFLUOR WHITE RW: Concentrated form, soluble in 10% Sulfuric Acid or Alcohol.

CALCOFLUOR WHITE RW SINGLE: Single strength form, soluble in 10% Sulfuric Acid or Alcohol.

CALCOFLUOR WHITE RWS: Single strength form, soluble in cool water.

Cyanamid also offers for cellulosic fibers a complete range of improved Calcofluor White brighteners. Fluorescent dyes have long been used by the industry to make textiles more attractive—but *nothing surpasses the newly improved Calcofluors for ease of application and whiter-than-white brilliance of end results!*

Ask your Cyanamid Dyes representative for full data and samples.

CYANAMID

*Trade Mark

AMERICAN CYANAMID COMPANY • DYES DEPARTMENT • BOUND BROOK, NEW JERSEY

News IN BRIEF

ACMI Approves Market Program. At a recent meeting of the board of directors of the American Cotton Manufacturers Institute, a market research and promotion program for the textile industry was authorized, on the recommendation of the Institute's Economic Policy Committee. A permanent advisory committee is to be formed to supervise the program.

Japanese Department Store for NYC. Takashimaya, one of Japan's leading department store chains, plans to open a New York branch. Comments a spokesman for the

National Federation of Textiles, "Retailers who have been openly espousing the cause of importing low priced Japanese goods in competition with American textiles may find themselves in a more sympathetic position if this trend continues."

National Minimum Wage Upheld. The U. S. Supreme Court has upheld the authority of the Secretary of Labor to fix minimum wages on a nationwide basis under the Walsh-Healey Act. The American Cotton Manufacturers Institute has announced that it is ready to sponsor, on behalf of the textile industry, a campaign to secure a Congressional probe of the Act, as a first step in securing its repeal.

Union Seeks 35-Hour Week. A work week of 35 hours, with 40 hours' pay, is the goal for Pennsylvania's 43,000 textile union members in a campaign launched recently by the Textile Workers Union of America.

No Transshipment Ban. Government spokesmen say that it is impossible to put a ban on textiles

transshipped from Japan and entering the U. S. from non-Japanese ports such as Hong Kong.

Textile Failures Hold Steady. Business failures among manufacturers of textile mill products were about the same in the first nine months of 1957 as in the similar period of last year, reports Dun & Bradstreet's Credit Clearing House. There were 71 textile failures, with liabilities of $7.96 million in January-September, 1957, compared with 68 failures and liabilities of $7.68 million in the first nine months of 1956.

Effect of Politics on Cotton. The direction of U. S. foreign economic policy will have more influence on whether or not cotton reaches a 20 million-bale consumption goal than

will new methods and lower costs, or any other factor, Lamar Fleming, Jr., board chairman of Anderson, Clayton & Co., told the recent Beltwide Cotton Mechanization Conference.

Higher Tariffs No Help to Wool? Higher tariffs on British woolens and worsteds won't help the U. S. wool textile industry, claims I. P. Garran, commercial minister for the British Embassy in Washington. Competition is not from high-grade fabric imports, but from domestic synthetics, according to Mr. Garran.

Canadian Stretch Patents. Patentex, Inc., has been granted basic Canadian patents on women's sheer stretch hosiery and yarns, including methods of manufacture. Patentex also holds similar U. S. Patents.

Causes for Low Textile Demand. The National Bank of Commerce, Memphis, Tenn., cites the following reasons for failure of textile

demand to pick up as anticipated: (1) Overproduction; (2) High price of cotton; (3) Purchasers of textiles are considering carrying costs of inventories more carefully; (4) Buyers refuse to believe that textiles will be scarce, or that prices will rise; (5) Reports that cotton prices will be lowered by Congress next year are causing buyer hesitation.

No-Sag Socks. Shamrock Knitting Mills, Inc., has been assigned a U. S. patent (No. 2,805,424) for eliminating the problem of sagging in anklet-type socks with a turndown cuff, by application of a small partial belt with buckle to the sock. The belt is also inter-

now...

See The NEW 1958 Beechcraft Models

They Are All at Southern Airways Company, Atlanta:

→ *The New* **1958 E18S SUPER 18**

→ *The New* **1958 D50A TWIN BONANZA**

→ *The New* **1958 TRAVEL AIR**

→ *The New* **1958 J35 BONANZA**

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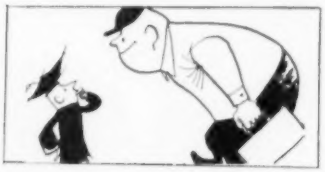
→ airfleet of the textile industry

changeable, so that different belts can be worn with different outfits.

Enrollment Rises at Clemson. Gaston Gage, Acting Dean of the School of Textiles, Clemson College, announces that 94 freshmen entered the School this fall, making up 9.1 per cent of total freshmen entering Clemson. Last year the School had 79 new students, or 7.7 per cent of the entering freshmen.



Commercial Sale of Wool Samples. Acting on plans previously announced [see TEXTILE INDUSTRIES for June, 1957, p. 73] the U. S. Department of Agriculture will no longer prepare and distribute practical forms or samples of the official standards for grades of wool and wool top. Commercial firms will be approved to do the preparation and distribution. Interested firms should contact the U. S. Department of Agriculture Wool Laboratory, Building 81, Denver Federal Center, Denver, Colo.

Cotton Time. National Cotton Week will be celebrated next year on May 19 to 24, marking the 28th consecutive year for the event. The theme will be "It's Cotton Time, U.S.A."

ACMI Asks ICA Favor US Mills. American Cotton Manufacturers Institute has called on the International Cooperation Administration to give preference to U. S. textiles in its purchases. Although the U. S. supplies the funds for ICA, only 8 per cent of ICA's 1956 purchases of $73 million worth of textiles were made from U. S. mills, while more than two-thirds of the purchases, or $50.5 million, was made from Japan.

Statistics for Researchers. A short course in advanced statistical methods, directly applicable to investigations of chemical processes, will be held at Harvard Business School, January 12-23, under the sponsorship of the Chemical Division, American Society for Quality Control. The course is intended for research and technical workers with experience in the statistical design of experiments in the chemical industries. Additional information is available from Richard S. Bingham, Jr., Research & Develop-

News IN BRIEF

Comments on the Venice conference

■ Topflight textile people from all over the free world attended the International Conference in Venice, Italy. Textile industries in all of these countries are members of this international organization except the United States; the delegates from this country were invited as observers. The organization has indicated that it would be glad to have us as members, and this question of membership is now under consideration by our industry.

The Italian textile industry acted as hosts—and surely they could not have been more gracious and hospitable than they were. . .

The American Delegation had an extended meeting with the Japanese Delegation. Because I had worked with the Japanese import problem so closely for the past two years I was asked to be the spokesman for our group. We made it clear that we could not, and would not, discuss any definite quotas, as this was something which had to be resolved between their Government and our Government.

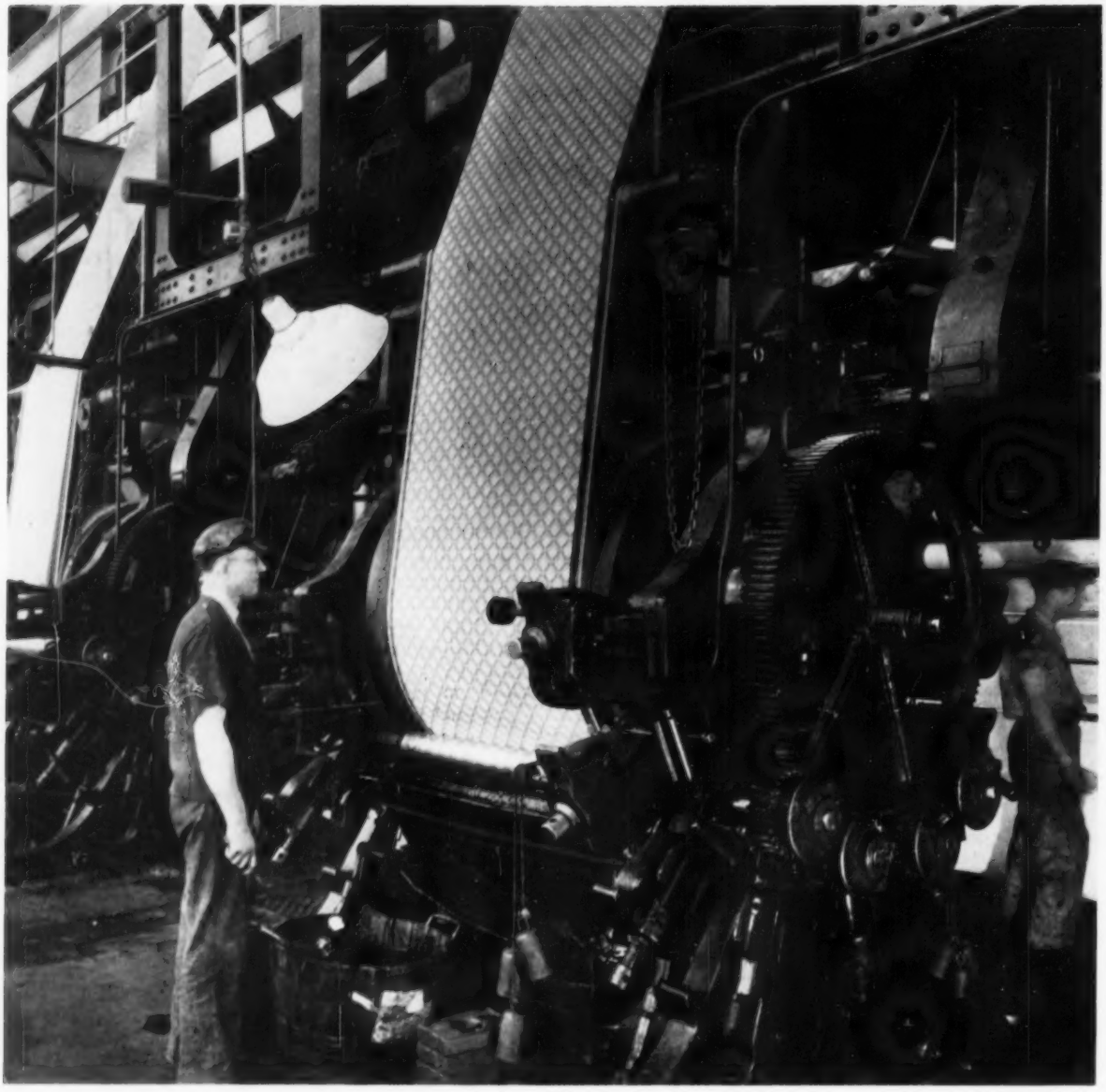
We made it crystal clear that not one single yard of Japanese cloth or one single Japanese garment was needed in the United States, and that any that came in caused unemployment here. The Japanese were emphatic that the last thing they wanted to do was to hurt our industry. They explained that they are a nation which must export to live. Lacking fertile soil and natural resources, about all they have to export is their labor. They must have foreign exchange in order to buy their raw materials.

We suggested that they try to get more of this foreign exchange by developing their tourist trade, by increasing their textile exports in their traditional markets, and by manufacturing for export articles other than textiles. All of this they expressed a willingness to do within the limits of their capabilities.

The voluntary quota arrangement announced last January, worked out between our Government and their Government, is being carried out according to plan. The Japanese have a reputation for scrupulously observing their commercial commitments and I am personally convinced that the Japanese industry wants to observe both the letter and the spirit of the voluntary agreement. We pointed out to them the problem of transshipment from Hong Kong and I believe they will deal with this to the limit of their ability.

We told the Japanese that with the increased effort that India and Hong Kong are making to add to their textile exports, our industry had no choice except to ask our Government to take account of the differences between our wage cost and our raw material cost and the cost for these items in low-wage countries of the world. This we intend to do, and only by legislation taking account of these factors can our industry get the protection we must have.

We believe the Japanese competition is under control for a five-year period. We are now threatened by India and Hong Kong. And next year the threat may be some other low-wage countries.—*J. Craig Smith, president, Avondale Mills.*



Wherever There's A Shaft That Turns . . .

The power supply in your mill is its life blood . . . every manufacturing process is dependant on power.

But unless power is transmitted correctly to machines, waste and inefficiency can rob your profits.

The best engineering help on power transmission is only as far away as your telephone. All you have to do is call the engineering department of SOUTHERN BELTING AND TRANSMISSION CO.

Complete power transmission is our stock-in-trade and we have a complete line of power transmission equipment. If you have a problem, let us quote . . . you'll be pleased with the attention to detail and exactness of specifications.

DON'T FORGET . . . we were formerly SOUTHERN BELTING CO., and we continue to manufacture the South's most complete line of textile loom leathers and flat belting.

SOUTHERN BELTING AND TRANSMISSION CO.

236 FORSYTH STREET, S.W. JACKSON 2-7221 ATLANTA, GEORGIA

ment Division, The Carborundum Co., P. O. Box 337, Niagara Falls, N. Y.

Wool Shrinkage Research. Harris Research Laboratories have embarked on a research program with the aim of learning how to produce wool fabrics better engineered to resist felting shrinkage in the

newer types of washing machines. The project is under the supervision of The Wool Bureau, Inc.

Deans Ask Liaison With ACMI. At a recent joint meeting of the National Council for Textile Education and the Education Committee of the American Cotton Manufacturers Institute, Martin J. Lydon, president of Lowell Technological Institute, proposed that the Committee assign one of its members who is "zealous and determined for progress in textile education" as a liaison agent with NCTE. His job would be to keep the industry alert to the needs of the textile colleges and to keep mill men informed of the activities of these institutions.

Too Much News? There are insufficient noteworthy occurrences to fill a daily paper, according to Dr. J. A. Jones, president of Union Theological Seminary. Dr. Jones told the Carded Yarn Association, meeting at Sea Island, Ga., that

events are too often made into incidents for the sake of the spectacular. There is hardly enough news for a monthly publication, and anyone knows there is not enough real news for a daily paper, he said.

Fabric Sample for Fungicide Studies. A master order for a three years' supply of two standard fabrics for the study of the performance of fungicides in soil burial, weathering, and other tests is to be placed by a group of government and industrial laboratories. One fabric is to be an untreated duck, and the other an identical duck treated with G-4. Interested mills may have their requirements included in the master order; contact Samuel Shapiro, Fungus Control Section, Materials Branch, U. S. Army Engineer R & D Laboratories, Fort Belvoir, Va.; or Patrick J. Hannan, Naval Research Laboratory, Washington 25, D. C.

Rubberized Fabric Good After 40 Years. Goodyear Tire & Rubber Co. has received a small roll of rubberized fabric which is still in

perfect condition after 40 years' storage in an attic. The fabric was made during World War I for use in gas masks.

Student Union at PTI. Philadelphia Textile Institute is currently conducting a drive to raise $200,000 as partial payment on a new Student Union Building. Dr. C. Scott Althouse of Reading, Pa., has pledged $50,000, contingent on the Boards of Trustees of the Institute raising the other $150,000. The balance of the cost of the building —$450,000—is to be obtained by a loan from the Federal College Housing Program and the Housing and Home Finance Agency.

Cotton Quota for 1958. A national marketing quota of 11,920,290 bales (500 lbs gross weight) and a national acreage allotment of 17,391,304 acres have been announced by the Department of Agriculture for the 1958 crop of upland cotton. Figures for the extra long staple crop are 79,022 bales and 83,286 acres. Bale figures are the same as last year for the upland crop, and permit an increase of about 2,500 bales of extra long staple. The quotas must be

News in Brief

approved by two-thirds of cotton farmers voting in a referendum on December 10 before they become law. As usual, few negative votes are expected in the referendum.

British Textile Students to U. S. The Textile Institute (England) has announced the Frank Wright Scholarship, which will enable U.K.-born graduates of English colleges to study for advanced degrees at the Textile Research Institute, Princeton, N. J., or at Mass. Institute of Technology, Cambridge, Mass.

MCTSA May List Certified Suppliers. The Military Clothing and Textile Supply Agency is considering setting up a certified list of firms qualified to supply specific items to the military. To qualify, a firm would have to prove itself competent to handle government business.

Cotton "Processing Tax." Cotton price supports are nothing more than a processing tax, said Sea-

Reproduced above is a poster being used by the Textile Education Foundation, Inc., in its campaign to recruit students for Georgia Tech's A. French School of Textiles.

Using Salt Efficiently

by **INTERNATIONAL SALT COMPANY, INC.**—America's largest producer of salt

How Large Plants Reduce Costs of Salt Handling and Brine Making

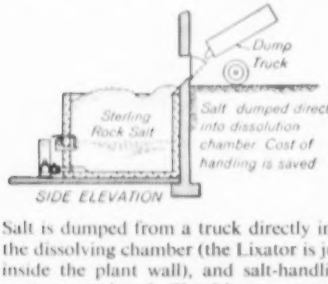
Many of today's large users of brine are saving money on salt deliveries, on handling salt in the plant, and on the production of saturated brine . . . by installing one rugged, permanent piece of equipment, a Storage Lixator. This unit (the exclusive development of International Salt Company) is a large combination salt-storage and salt-dissolving tank.

The Storage Lixator is strong—can easily hold the weight of heavy trucks or railroad cars. It's adaptable—can be located almost anywhere, either below or above ground, either inside the plant or outside. It's fully automatic—continuously replenishes whatever amounts of brine are drawn off through the piping system to points of use. And it needs no maintenance.

Another money-saving feature: with the Storage Lixator, brine-storage tanks are rarely necessary. This is because International's Lixate principle, on which every Storage Lixator is based, makes use of "Wet Storage"—meaning that undissolved salt is stored in the same tank with saturated brine. Even when the Lixator is completely filled with salt, there is ample room between the salt crystals for storing fully saturated brine.

The operation of every Storage Lixator is basically the same, but there are many design possibilities, by which International's Lixate principle can be adapted to any plant requirements. Here are some typical Storage Lixators, showing how they are engineered to meet specific needs.

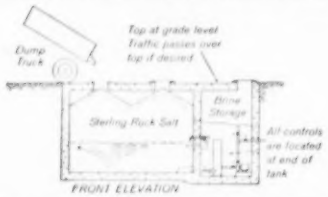
1. The Inside Single-Compartment Storage Lixator . . . ideal for congested areas where outside property is not available.



Salt is dumped from a truck directly into the dissolving chamber (the Lixator is just inside the plant wall), and salt-handling costs are reduced. The Lixator controls are easily accessible from inside the plant.

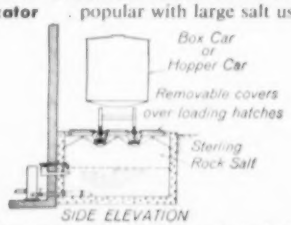
2. The Shed-Type Storage Lixator is very practical for small-scale storage and dissolving operations when space is available adjoining the plant building. Large doors permit easy salt entry by portable conveyor belt fed directly from a dump truck or railroad car. With this setup, any available space can be used for an inexpensive brine-making unit inside the shed.

3. The Integral Brine Tank Storage Lixator . . . one of the best for manufacturing operations which require large amounts of fully saturated brine only at certain times. (The brine-storage tank included in the Lixator can be made as large as necessary.) Because the top of this Lixator is at ground level, traffic can pass over it—and delivery trucks can pour salt directly into the loading manholes.


Top at grade level. Traffic passes over top if desired
Dump Truck
Brine Storage
Sterling Rock Salt
All controls are located at end of tank
FRONT ELEVATION

4. The Underground-Tank Storage Lixator is a single-compartment rock-salt storage and dissolving unit which adjoins a railroad siding. With the top of the Lixator on the same level as the floor of the railroad car, salt delivery by power scoop, or portable conveyor belt is an easy operation. Fully saturated brine, made automatically in this Lixator, can be pumped any distance to the points of use.

5. The Undertrack Dual-Unit Storage Lixator . . . popular with large salt users.



It has been found that its relatively high installed cost is more than offset by the most inexpensive salt delivery method known today (and possible only with this undertrack design). A railroad hopper car passes over the Lixator, and salt drops directly into storage. No conveyor belt is needed, and salt delivery is entirely automatic.

6. The Dual-Compartment Storage Lixator is designed for plants which use exceptionally large amounts of saturated brine. There are two separate dissolving compartments, storing an ample supply of brine for every need. The control room is located between the two storage and dissolving chambers. This unit, with its extra-large storage capacity, permits very economical purchasing and handling of salt.

There are many other types and designs of Storage Lixators—along with numerous refinements to suit your particular needs.

TECHNICAL SERVICE WITH YOUR SALT

Through skilled and experienced "Salt Specialists," International can help you get greater efficiency and economy from the salt you use. International produces both Sterling Evaporated and Sterling Rock Salt in all types and sizes. And we also make automatic dissolvers in metal or plastic for both kinds of salt. So we can recommend the type and size of salt most perfectly suited to your needs.

If you'd like the assistance of an International "Salt Specialist" on any problem concerning salt or brine—or further information on Storage Lixators—just contact your nearest International sales office.

International Salt Co., Scranton, Pa.

Sales Offices: Atlanta, Ga.; Chicago, Ill.; New Orleans, La.; Baltimore, Md.; Boston, Mass.; Detroit, Mich.; St. Louis, Mo.; Newark, N. J.; Buffalo, N. Y.; New York, N. Y.; Cincinnati, O.; Cleveland, O.; Philadelphia, Pa.; Pittsburgh, Pa.; and Richmond, Va.

FOR INDUSTRY, FARM, AND THE HOME—

STERLING SALT

PRODUCT OF INTERNATIONAL SALT CO., INC.

bury Stanton, president of Berkshire Hathaway, Inc., in a recent speech. He urges industry support of any legislation which would return the price of cotton to its natural level, without any artificial props.

Fire Safety Code. A new "Safety Code for Inspection, Maintenance and Protection of Standpipe and Inside Hose Systems" is available without charge from the Fire Equipment Manufacturers' Association, One Gateway Center, Pittsburgh 22, Pa.

Wool Science Reports. The Wool Bureau has started publication of a new series of Wool Science and Technology Reports, the first of which is entitled "Carbonizing Wool Stock, an Improved Sulfuric Acid Method." It is based on research work done in Australia. Copies are available free from the Bureau, at 16 W. 46th St., New York 36, N. Y.

U. S. Gives More Textile Machinery. The International Cooperation Administration purchased over $130 million worth of textile machinery, principally from American manufacturers, during the period April 3, 1948 to June 30, 1957, for aid to mills in Europe, the Near East, and Asia. The amount spent rose sharply in 1956 and 1957, after a three-year lull. Countries which have received over $1 million worth of textile machinery from ICA since 1948 include Free China, Korea, Philippines, Vietnam, Greece, Pakistan, Turkey, Austria, Belgium and Luxembourg, Denmark, France, West Germany, Italy, Netherlands, Norway, Sweden, and the United Kingdom. The following are the expenditures by fiscal years (thousands of dollars):

1949	$10,212
1950	44,084
1951	31,035
1952	12,283
1953	6,110
1954	6,037
1955	4,163
1956	6,517
1957	9,831

Cotton Goods Production Down. Cotton broad woven fabric produc-

MERCHANDISING NOTES

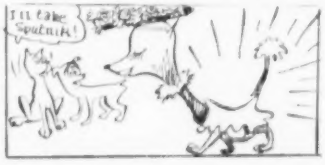
American Bemberg has introduced a solution dyed filament rayon yarn with color applied at irregular intervals, said to have styling possibilities in apparel, home furnishings, and automotive fabrics.

Celanese Corp. of America will embark on a promotion program, designed to break next September, which will be based on decorative fabrics inspired by designs brought back from Latin America by John and Earline Brice, home furnishings consultants to Celanese. Mill and converter executives, and their designers, will be invited to a showing of articles brought back by the Brices.

Dow Corning Corp. has launched a promotion campaign for its Sylmer silicone finish in which 600 department, specialty apparel, and furniture shops will participate. Theme for the campaign is "Safer With Syl-mer," to highlight the water and spot resistant qualities of the finish.

Greenwood Mills, Inc., is offering to mills and converters a new "easy care" fabric made of blends of dynel with cotton, rayon, or acetate for apparel use, under the trade name "Bondyne."

Poodletown, posh Park Avenue emporium for pedigreed pooches, includes the following in its spring line: a black lace cocktail collar, with a matching cocktail apron for



Fido's mistress, at $17; terry cloth beach robe, $4.50, with matching terry cloth "mutt mits" for $3; and a blue gabardine raincoat with matching leggings and hood.

Pincus Bros.-Maxwell, Inc., will use a blend of Darlan and wool in a men's tropical weight suiting. The fabric, "Velo-Touch," was developed by B. F. Goodrich Chemical Co.

Manchester Hosiery Mills is selling "tint it yourself" women's nylon hosiery. The purchaser buys white hosiery, picks a shade from a swatch book, and receives pellets of dyestuff in the proper combination and quantity to dye the hosiery the desired shade at home.

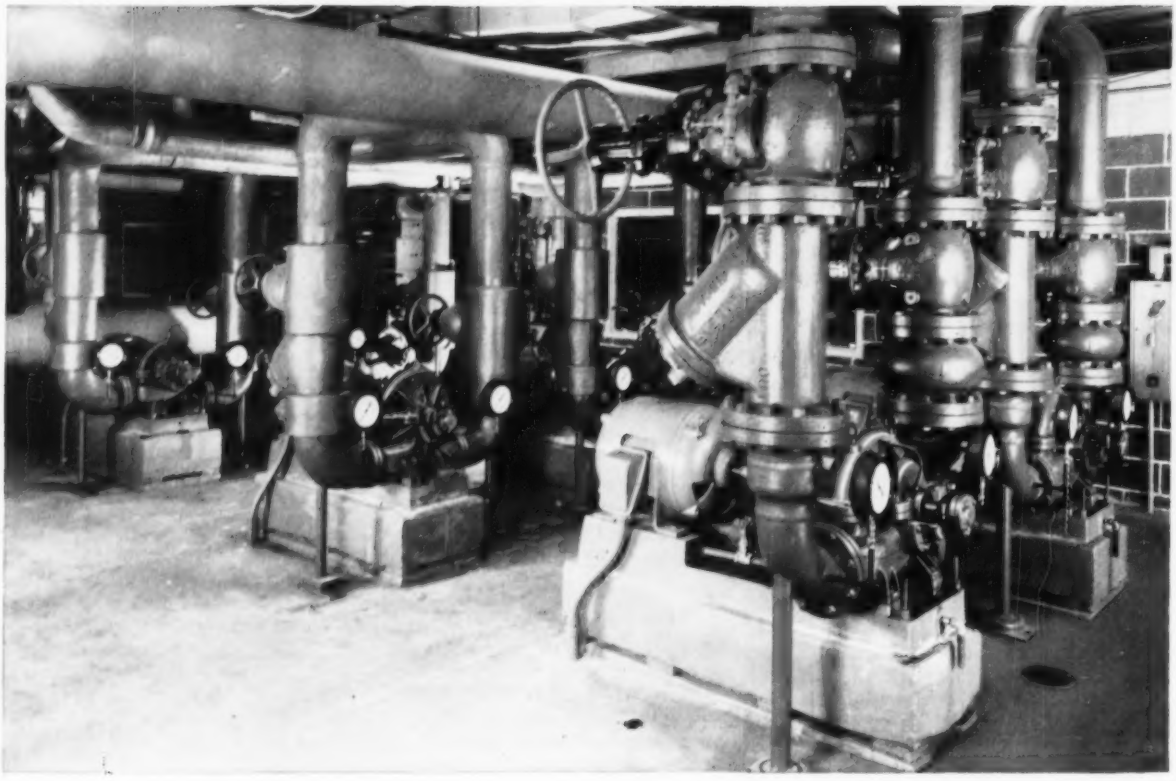
Shelley Sportswear, Inc., reports selling "Wunderwear" Dacron Fibrefill insulated underwear to an entire Alaskan Eskimo village of 2100 people, for a real cool $30,000.

J. P. Stevens & Co.'s president, Robert T. Stevens, speaking at a recent meeting of textile men, advocated a joint textile-apparel industries program to promote "a better-dressed America."

Underwear Institute has taken CBS Television to task for a recent "I've Got a Secret" program, in which three participants discussed

a movie scene in which an actor revealed that he was not wearing an undershirt, and then announced that they also were not wearing undershirts.

U. S. Rubber Co. is currently exhibiting a production loom weaving a three-dimensional polyethylene upholstery fabric, at the company's exhibit hall in Rockefeller Center, New York. The fabric is called "Corrugated Trilok," and is used in the 1958 Pontiac Star Chief Catalina.



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Many rely on these "Buffalo" Pumps

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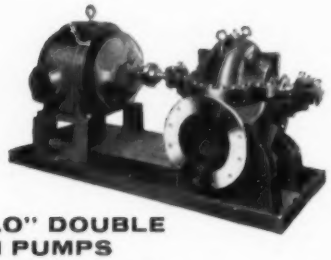
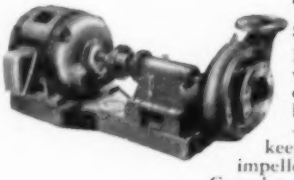
Whatever your pump problem, write us for engineering data. We'll gladly submit recommendations that will help you with your liquid-moving requirements.



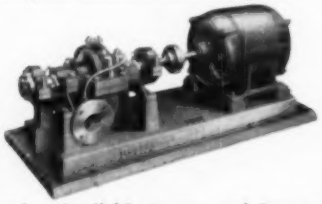
"BUFFALO" DOUBLE SUCTION PUMPS

These pumps are designed for the finest performance possible in clear water service in 10 to 14,000 gpm capacities. Widely used for air conditioning service, because of their peak efficiency. Write for Bulletin 955-Q.



"BUFFALO" SINGLE SUCTION PUMPS

Husky pumps for husky jobs, with these outstanding features: oversize bearings capable of handling speeds up to 5000 rpm — sealed-in bearing housing to keep out foreign matter—enclosed impellers, to retain initial efficiency. Complete details in Bulletin 976-E.



"BUFFALO" MULTISTAGE PUMPS

"Buffalo" Type "RR" Multistage Pumps are highly efficient for high pressure applications with clear water. Ideal for boiler feed service. Available in two and four stage designs, up to 900 gpm and 500 lbs. Write for Bulletin 980-D.

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Canada Pumps, Ltd., Kitchener, Ont.
Sales Representatives in all Principal Cities

A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID

tion in the second quarter of 1957 totaled 2.436 million linear yards—3 per cent below the previous quarter and 7 per cent lower than the April-June, 1956, level, reports the Bureau of the Census. Production of all major fabric classes showed declines compared with the previous quarter, ranging from 1 per cent for print cloths to 11 per cent for duck and allied fabrics. The declines compared to the second quarter of 1956 ranged from 3 to 20 per cent.

Research Insurance. A federal research insurance organization to distribute the risks of research for small firms is advocated by Johan Bjorksten, president of Bjorksten Research Laboratories, Madison, Wis. According to Mr. Bjorksten's plan, government would reimburse small firms for, say, two-thirds of the cost of unsuccessful research projects, and would take, say, one-third of the profits of successful ones, the exact amounts to be determined on a basis which would make the plan self-supporting.

Four-Day Week Urged. F. E. Grier, president of Abney Mills, urges a work schedule of four days a week for six weeks and five days

for the following year as the only solution to the present "economic nightmare" in which textile mills find themselves.

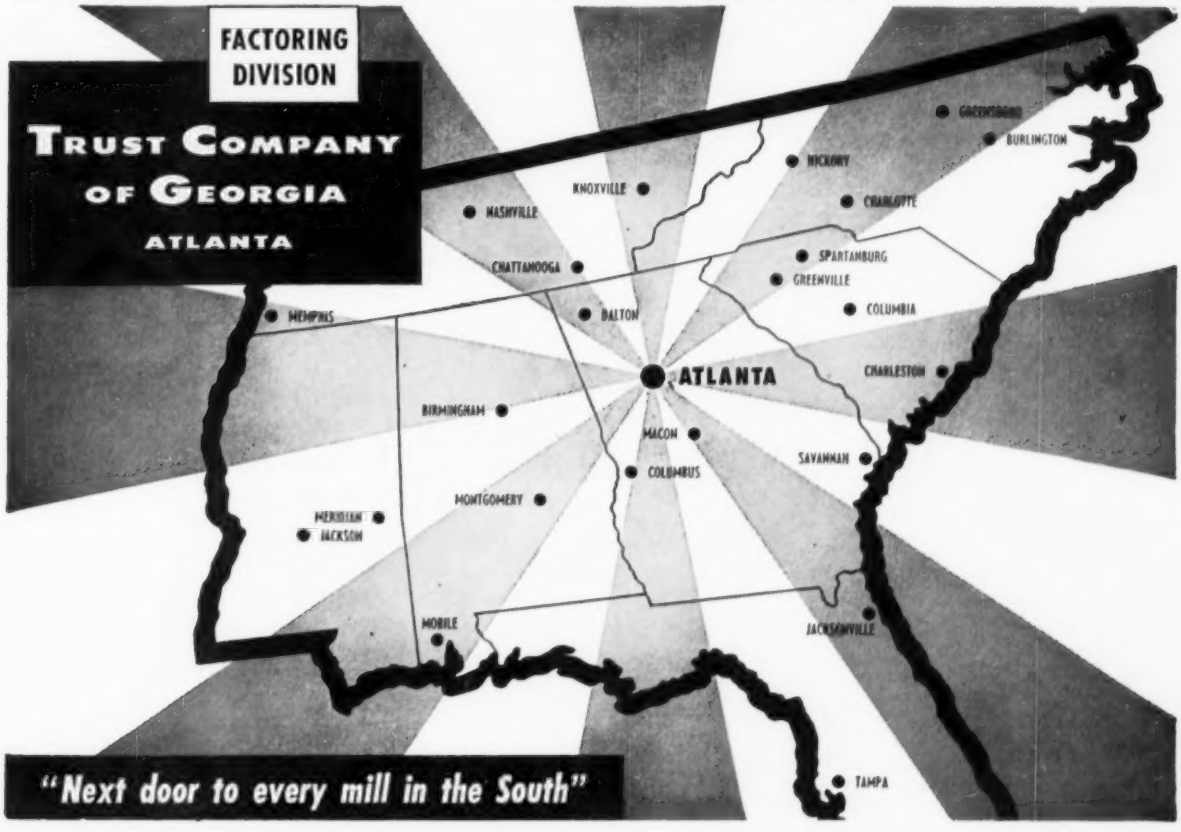
Mill for Hong Kong. A cotton mill with about 14,000 spindles and over 400 looms is to be built in Hong Kong by the East Sun Textile Co., Ltd. The mill will employ about 700, and is expected to be finished late next year.

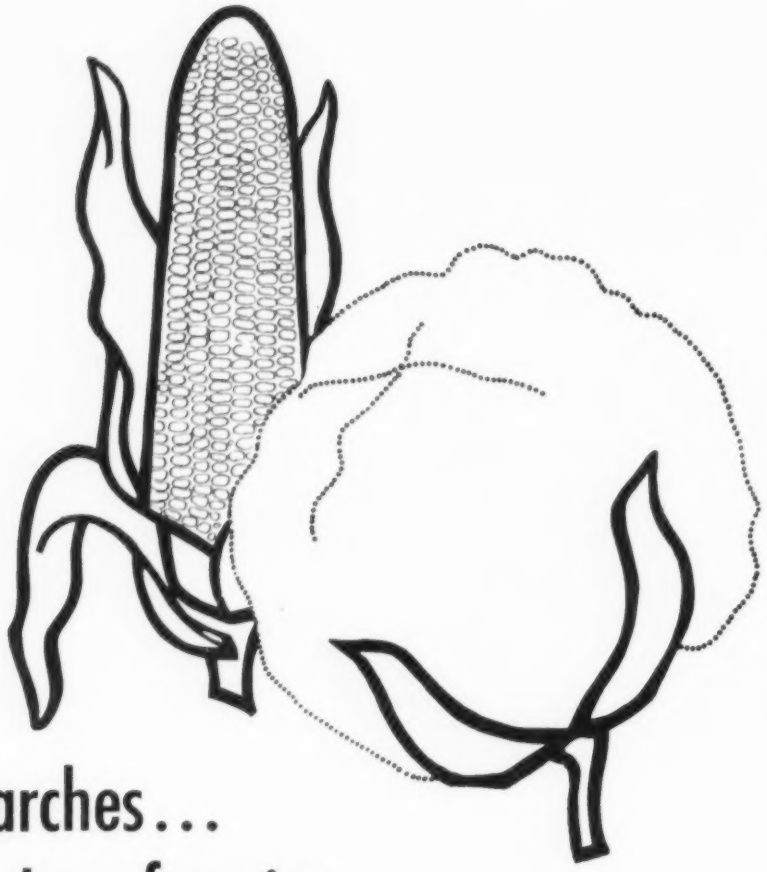
No Cut in U. S. Cotton to Japan. Unfavorable trade balances will not affect Japanese purchases of U. S. raw cotton, according to Takashi Murayama, research director of the All-Japan Cotton Spinners' Association. Despite the fact that Japan imports twice as much from the United States as she exports to us, there may even be a slight increase in Japanese purchases of our cotton, according to Mr. Murayama.

News in Brief

Resin Research for Clemson. The School of Textiles at Clemson (S. C.) College has been awarded a contract by the Agricultural Re-

search Service, U. S. Department of Agriculture, for a study of the effects of various synthetic resin and rubber-latex emulsions on cotton fabrics.





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AN EXECUTIVE Views

THE NEWS IN TEXTILES

Prepared by a man who is closely identified with the textile industry.

Safety isn't always safe

WHAT we are about to relate will probably arouse the ire of safety engineers in general and textile engineers in particular—and we hope it does! But we believe it's about time that safety programs, safety regulations, and safety in general received the thorough overhauling and the cold-water, dash-in-the-face treatment that is so long overdue—and which, in our opinion at least, they so richly deserve.

Our ire, too, has been one of long standing; as a first line supervisor, we were constantly bombarded with safety reports, slogans, safety literature, minutes of safety meetings, insurance forms to fill out, and frequency and severity reports which (perhaps we should be chided) we simply and quite frequently tossed into the waste-paper basket. We won't go out on a limb and say that all this was unnecessary, but at one time safety literature and reports comprised our major interdepartmental mail. Thank heavens it wasn't reciprocal correspondence!

The point is, we believe that statistical safety data and many of the safety reports should be for the charts and not be a supervisor's bible! The "do's" and "don'ts" we received from the safety department sometimes led us to believe that we were performing duties that the safety engineer should perform himself, or that should be performed by employees of his department, if he had any. Incidentally, the large mill we are referring to had a full time safety engineer and clerk.

But we can't place all the blame on safety engineers; the safety engineers we knew personally through safety meetings, etc., and others we occasionally came into contact with, were so tied up with safety statistics and reports they had little time for "grass roots" safety—but we *have* met a few "grass roots" safety engineers.

Safety engineers who allow themselves to become tied up with red tape, either through their own or through mill policy, certainly can't get around the plant as often as they should. In this respect, if it is mill policy, we hasten to add, management should take a more vigorous interest in safety policies and not become so fully immersed in production and quality that the only time they think of safety is when they summarize costs or attend a safety meeting. This is when red tape builds up and safety engineers get into a rut.

When a safety engineer has to cover three divisional safety meetings and one executive safety meeting every month, and has to write up the minutes and recommendations and send them out to the interested parties, usually to those who attend such meetings, he has his work cut out for him. Add to that the frequency and severity reports, along with details of man hours lost through accidents, signing and sending out insurance forms, and perhaps you'll wonder as we did—how could he get around the mill often enough?

But is all this necessary for a safety engineer to do alone? We hardly think so. Perhaps most of this work can be done by a trained secretary-stenographer who could also be the clerk, but we held and still hold that most mill safety engineers, according to our listening post, like to do most of this work themselves. At least we never saw a clerk at a safety meeting—the safety engineer was always the secretary. This is part of what we mean by red tape.

Not all mills delegate safety as a "fringe" policy to production and quality planning, but many mills probably will agree that safety plays a "secondary" role where safety programs, safety schedules, involving both human and mechanical hazards, carry no penalty for infractions but are solely educational and guidance pointers. This can degenerate into a dangerous lip-service policy unless management and mill safety engineers accept the fact—the stark fact—that safety, like stock, costs money, and should not be dismissed as just another item in the general expense burden.

The line supervisor is perhaps the best teacher of safety in the mill. Our supervisors should not be compelled to be super-salesmen to sell safety (remember, they have other important duties to perform); but if they have to operate under safety programs that lack disciplinary "teeth," the frequency will be more frequent and

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the severity more severe.

There is nothing more frustrating to a supervisor who repeatedly has to tell an employee, for example, to wear an apron that buttons in back and not one that ties in back with flowing apron strings. He could even mention the wearing of slacks (and this is partly what we mean by "grass roots" safety—getting down to correctives for visible causes); but if the employee knows the supervisor hasn't the authority to make her wear safe clothes, she can go blithely on her way, continuing to be a safety hazard, if she so insists.

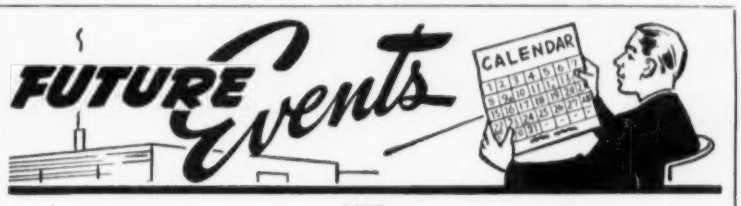
We know—we have spent many frustrating hours ourself on such safety hazards. We have "recommended" dozens of times, when we should have "ordered" but once or twice, with explanatory reasons, of course. There is nothing more final than discharge, but if after one oral warning and one or two written ones, the employee does not respond, termination from employment is the only safe recourse. A potential or present hazard is an eventual accident.

However, we know from further experience that the average employee will respond to *enforced* safety rules. But the employee *must* know.

In our plant, where there is a smoking section on each floor, any violation of the rules governing their operation meant loss of privilege for an indefinite period. But the enforcement of all safety programs was not consistent — a dangerous policy. But it was significant that not a single complaint was received against the smoking rooms in one whole year!

Our supervisors—our line supervisors—want safe departments, but they need constant help and guidance and *action* from our mill safety engineers concerning safety matters, just as much as they need guidance from their immediate superiors concerning production and quality problems. Their complaints against safety engineers, while localized, could be general (and we don't just mean being flooded with safety literature); we have seen enough and have heard enough to cause us to ponder upon the gravity of the situation. When seen through the eyes of a supervisor, perhaps the conclusions we draw are not too far off, even if we have the feeling that these complaints will no doubt make us persona non grata in certain quarters.

We could place safety engineers in several categories, but three will suffice to point up what has crossed



1957

Date		Event	Location
Dec.	5	Rhode Island Section AATCC	Johnson's Hummocks Grill Providence, R. I.
	6	Delaware Valley Section AATCC	Kugler's Restaurant Philadelphia, Pa.
	6	Niagara Frontier Section AATCC	Buffalo, N. Y.
	6	New York Section AATCC	New York City
	6	Northern New England Section AATCC annual meeting	Hotel Continental Cambridge, Mass.
	7	Southeastern Section AATCC	Biltmore Hotel Atlanta, Ga.
	13	Western New England Section AATCC	Rapp's Restaurant Shelton, Conn.

1958

Jan.	24	Hudson-Mohawk Section AATCC	Albany, N. Y.
Jan. 30-Feb.	1	Textile Div., American Society for Quality Control annual conference	Clemson House Clemson, S. C.
Feb.	12-14	Cotton Research Clinic	Carolina Hotel Pinehurst, N. C.
	15	Mid-West Section AATCC	Hotel Bismarck Chicago, Ill.
Mar.	6-7	Textile Quality Control Association	Poinsett Hotel Greenville, S. C.
	13-14	Southern Textile Methods & Standards Association	Clemson House Clemson, S. C.
	18-21	A.S.T.M. Committee D-13 spring meeting	Sheraton Park Hotel Washington, D. C.
Apr.	10-12	American Cotton Manufacturers Institute annual meeting	Hollywood Beach Hotel Hollywood, Fla.
	16-18	Alabama Textile Manufacturers Association annual meeting	Hotel Buena Vista Biloxi, Miss.
	21-22	National Association of Hosiery Manufacturers annual meeting and Hosiery Industry Conference	Hotel Roanoke Roanoke, Va.
	23	The Textile Institute annual meeting	Nottingham, Eng.
	23-26	Cotton Manufacturers Association of Georgia	Boca Raton Hotel & Club Boca Raton, Fla.
	24-26	Phi Psi Textile Fraternity annual convention	Philadelphia, Pa.
30-May	1	The Fiber Society	Clemson House Clemson, S. C.
May	1	Underwear Institute annual meeting	Hotel Biltmore New York City
	6-8	Canadian Textile Conference	Queen Elizabeth Hotel Montreal, Que., Can.
	19-24	National Cotton Week	
June	4-7	Tufted Textile Manufacturers Association annual meeting	Castle-in-the-Clouds Lookout Mountain, Tenn.
	19-21	Southern Textile Association annual convention	Grove Park Inn Asheville, N. C.
Sept.	11-12	Combed Yarn Spinners Association annual meet	The Cloister Sea Island, Ga.
	19-20	Textile Quality Control Association	Hotel Barringer Charlotte, N. C.
	25-26	Northern Textile Association	Wentworth-by-the-Sea Portsmouth, N. H.
Oct.	1-2	Chemical Finishing Conference	Washington, D. C.
	6-10	Southern Textile Exposition	Greenville, S. C.
	15-25	International Textile Machinery Exhibition	Belle Vue Manchester, England
30-Nov.	1	AATCC National Convention	Hotel Conrad Hilton Chicago, Ill.

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Polyamines • Soda Ash • Sodium Chlorite Products • Sodium Methylate • Sulfate of Alumina • Sulfur (Processed) • Sulfuric Acid

our range of experience. First: the slogan writers or slogan contest engineers, who seem to believe that if they come up with a catchy slogan, it will be the cure for all safety hazards! We happen to know that while one such contest was going full blast in the mill—three cash prizes a month for six months for the best safety slogans submitted — the fire hoses at each floor level were taken to a nearby field and tested. Between 60% and 70% split wide open—useless!

Secondly, we have the statistical safety engineer (the duties of which we have listed in part)—and we have them in textile mills as well as in other industries, but we believe that the mills can afford them less. These safety engineers apparently are more interested in statistics than in causes. What we actually mean is that the causes and hazards, which are the basis for the statistics, receive less prominence in their reports.

Safety is one of our cardinal policies (though we are not an engineer) and because of the position we held in the mill, plus our interest in safety, we were on many occasions invited to attend local and regional Industrial Safety Council meetings. Sometimes we listened to speeches on safety that would draw on to approximately forty minutes—and we wondered. Sample titles: "An Accident Happens in the U.S.A. Every Six Seconds," and "How To Classify a Lost Time Accident."

We felt they were of little concern to us or to our job at the time—and we definitely can state that we couldn't take statistical messages of this type back to the employees. It was astounding but true that it was the exception rather than the rule to hear outside safety lectures on causes and hazards, and the human factors such as we know in the mill.

We won't go so far as to say that all this was unnecessary—far from it—but much of it is, we believe, ill-timed and indiscriminately distributed. Line supervisors who attend industrial safety meetings at their company's expense do not wish to return to their production department with statistics they have no immediate use for; they'd have a tough job selling their own plant's safety statistics.

Our third category of safety engineers—the "grass roots" safety engineer—was comprised mainly of insurance representatives, but they must have made some converts because we've also met a few at safety meetings who were regular mill safety engineers. Furthermore, we didn't just attend a few safety meetings, local and regional. Over the years it has run into a considerable number. We've listened to the "grass roots" mill safety engineers enthuse over their programs—attending and assisting department safety committees and encouraging safety suggestions, and following special safety repair orders through and getting things done.

Most important was the fact that their first level of interest was in the human being—how he worked, the clothes he wore, and the mechanical hazards that surrounded him. We've seen such an engineer impress a group of female employees with a vivid exhibition on the effects of static electricity as given off by cross running belts. Just prior to this a female employee had her hair caught by the attraction of the static electricity, and lost a small portion of her scalp. The safety engineer bared his arm near a cross belt; the pulling attraction of the static electricity made the hair on his arm stand straight! Every female employee in the department was soon wearing a hair net. Such assistance can almost take the place of disciplinary action—especially where none is authorized.

This is what we meant when we stated that supervisors needed help and action. You have to be a supervisor really to appreciate this type of safety engineer. Ask them. This type of engineer knows how to relegate statistics and other red tape to others while still retaining supervisory control and getting around the mill often enough to make inspection tours with the supervisors and assisting them with their human and mechanical safety problems.

The most important safety hazard is the employee—if we first concentrate on him, we'll have fewer statistics and lower safety costs.

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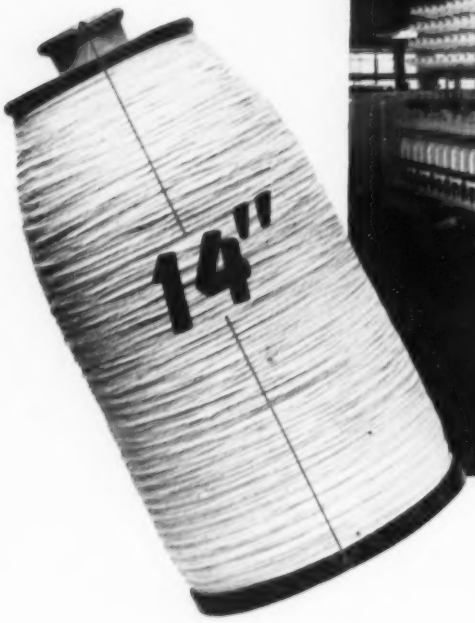

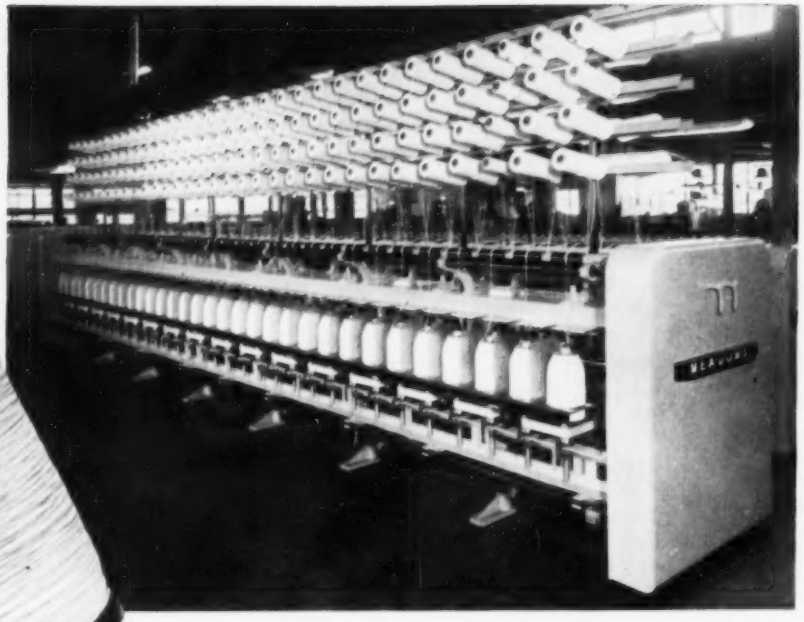

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It is as completely anti-friction as a frame can be made. All gear-end studs and roll stands are ball-bearing. Individual drive pulleys and shafting are ball-bearing mounted. Double ball-bearing tension pulleys make reversing easy. Lifter rod bushings have been eliminated, replaced with anti-friction rollers. Even the builder motion is anti-friction.

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If you have twisting problems, please contact us.

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Here's an easy-to-use system which provides the answer to the question:

What size package should we make?

by F. G. Ernest

Exclusive

IN setting up front roll speeds and package sizes, it often is assumed that the highest speed and the largest package size will result in the greatest possible economy. Consideration of quality and running conditions (which in turn influence work load assignments) have always acted as a limiting factor on speed. Until recently, the size of the package itself has constituted a deterrent to high speed.

The advent of larger package spinning has brought along with it reasonably high front roll speeds, thus reducing doffing costs greatly. Given these modern developments, it seems reasonable that the highest speeds and the largest package should yield the most economical production.

This is true as far as the spinning process alone is concerned. However, in an integrated manufacturing plant it is not feasible to isolate a single process. Each process is influenced by those which precede it, and in turn influences those which follow it.

In the case of spinning, in addition to the importance of meeting the standard requirements with regard to such items as yarn count, evenness, twist, and other specifications, it is important to keep in mind that the stock which has been placed on the bobbins must, in the very next process, be removed.

It is this necessity in the manufacturing process which raises doubts as to the validity of the old axioms regarding maximum speeds and maximum package size. The development of large package spinning has brought forth machinery to unwind these larger packages.

The considerations which must be given to this rewinding, from the point of view of cost as well as in order to prevent bottlenecks in the production process, have given rise to the concept of "optimum package size" and "optimum spinning speeds."

In the unwinding process, which is really only part of the function of transferring the yarn from one spinning bobbin to another (probably larger) package, considera-

tions of quality and performance again enter the picture.

The lay and wind of the yarn on the bobbin must be such as to insure the least possible breakage, sloughing off, and tangling. These factors are fundamental if adequate production goals at reasonable efficiencies and costs are to be achieved.

However, another factor influences the efficiency of the operation. The size of the spinning package, or more precisely the number of yards which the package contains, have a profound effect on efficiency.

Machinery Developments Create New Conditions. The development of winding and spooling equipment for use with large spinning packages has introduced the "by-pass" feature. This innovation enables a unit to continue its winding process undisturbed if the package from which it is feeding has not been exhausted at the time when the operator or a mechanical knotter is ready to service it.

This is true although neighboring units are in need of service, either due to breakage or the need to replace the supply package. These neighboring units are serviced (that is, the supply package is repaired or replenished) while one original unit is "by-passed" and continues to perform.

This is the case regardless of whether the units are stationary and are serviced by a "traveling" knotter and a roving operator, or whether the units themselves rotate and pass a stationary operator and knotter.

Given this condition, it becomes quickly apparent that the largest possible spinning package is not necessarily conducive to the highest possible efficiency. "Maximum" no longer equals "optimum." Instead, it becomes important to have the size of the package, and thus the time it takes to unwind it, geared to the length of the "machine cycle," or to multiples thereof.

Again, it makes no difference whether this cycle consists of the time per round of a traveling knotter and operator, or whether it is constituted by a winding unit completing its traverse and returning to its point of origin.

To illustrate specifically: If the cycle time is five minutes, but it takes six minutes to unwind a spinning package, the unit will be idle for the four remaining minutes of the second cycle.

That is to say, that out of a total time of ten minutes for two cycles, a maximum efficiency of only 60% can be expected. From the point of view of overall cost and efficiency, it might well have been better to reduce the package size in order to bring the unwinding time within the cycle length.

On the other hand, it might have been possible to reduce the cycle time to, say four minutes, and to increase the package size by 15%, thus extending the unwinding period to seven minutes. Thus, it would take two cycles to complete one bobbin, but the efficiency of the unwinding process would now be increased to 87.5%.

It is noteworthy that this represents an increase of almost 50% of our original efficiency. Since the winding speed has remained constant, this constitutes a net gain in actual production. At the same time the operators' work load has not been increased.

Supply Package vs. Knotter Travel Time. The ratio of the machine cycle to the unwinding time depends on a number of variable factors such as the length of the cycle itself, the size of the supply package, the yarn count, and the winding speed. It is this variability of the components which makes it possible to maintain flexibility and to achieve optimum conditions. However, it necessitates a thorough study of all the factors involved and much experimentation.

This is particularly true where one machine must accommodate several yarn counts at the same time. It is this situation which makes the effort to achieve near optimum conditions so essential. Otherwise, some of the yarn counts would be unwound at less than 50% efficiencies.

To arrive at a decision regarding the adjustment of each factor for the purpose of achieving the most advantageous arrangement it is helpful to have tables which show at a glance at which point the variable components yield the desired results.

This is particularly true where frequent changes are involved and where the necessary decisions have to be made quickly by the operating supervisors.

The number of yards on a given size package will vary with the yarn count. However, to simplify the problem and to reduce it to its fewest possible variable factors, this fact can be ignored by using only the spinning front roll speed and the running time per doff on the spinning frame. Thus, when a certain winding speed has been decided upon, a simple ratio of the amount of yarn placed on the package and the time it takes to remove it can be established by the following formula*, where:

A - rpm of front roll
B - time between spinning doffs (min)
C - rpm of unwinding drum
D - circumference of unwinding drum
E - unwinding time in minutes

$$\frac{A \times 3.1416 \times B \times (1.00 - \text{contraction})}{36 \times C \times E} = E$$

*All factors in the numerator of the fraction refer to the spinning frame, such as running time per doff on the spinning frame, and spinning contraction. If the diameter of the spinning front roll is other than 1 in., the value of the diameter will become a factor in the numerator. Contraction in this case is 0.05.

Based on this equation, Table 1 shows the rewinding time (in minutes) of spinning bobbins which were produced with spinning frame front roll speeds ranging from 105 rpm to 155 rpm, and which had a running time ranging from six hours to twelve hours.

All values are based on a winding drum speed of 1300 rpm and an effective winding drum circumference of 0.9163 yards. The spinning front roll diameter is assumed to be 1 in. A spinning contraction of 5% was used.

In any given mill the effective diameter of the winding drum or shaft will be constant. However, it may be desirable to maintain the winding speed as one of the flexible conditions. In that case, in order to save the necessity of having a duplicate of Table 1 for every conceivable winding speed, it will be useful to be able to translate the values from Table 1 in terms of the various contemplated winding speeds.

This is accomplished by means of Table 2 which shows the changes which will be effected in the

TABLE 1

Minutes Unwinding Time per Spinning Bobbin Based on Spinning Front Roll Speed and Running Time*

Spinning front Roll (rpm)	Hours running time per doff on spinning frame																								
	6	6¼	6½	6¾	7	7¼	7½	7¾	8	8¼	8½	8¾	9	9¼	9½	9¾	10	10¼	10½	10¾	11	11¼	11½	11¾	12
105	2.63	2.74	2.85	2.96	3.07	3.18	3.29	3.40	3.51	3.62	3.73	3.84	3.95	4.06	4.17	4.28	4.38	4.49	4.60	4.71	4.82	4.93	5.04	5.15	5.26
106	2.66	2.77	2.88	2.99	3.10	3.21	3.32	3.43	3.54	3.65	3.76	3.87	3.98	4.09	4.21	4.32	4.43	4.54	4.65	4.76	4.87	4.98	5.09	5.20	5.31
107	2.68	2.79	2.90	3.02	3.13	3.24	3.35	3.46	3.57	3.69	3.80	3.91	4.02	4.13	4.24	4.36	4.47	4.58	4.69	4.80	4.92	5.03	5.14	5.25	5.36
108	2.71	2.82	2.93	3.04	3.16	3.27	3.38	3.50	3.61	3.72	3.83	3.95	4.06	4.17	4.28	4.40	4.51	4.62	4.74	4.85	4.96	5.07	5.19	5.30	5.41
109	2.73	2.84	2.96	3.07	3.19	3.30	3.41	3.53	3.64	3.76	3.87	3.98	4.09	4.21	4.32	4.44	4.55	4.67	4.78	4.89	5.01	5.12	5.23	5.35	5.46
110	2.76	2.87	2.99	3.10	3.22	3.33	3.45	3.56	3.67	3.79	3.90	4.02	4.13	4.25	4.36	4.48	4.59	4.71	4.82	4.94	5.05	5.17	5.28	5.40	5.51
111	2.78	2.90	3.01	3.13	3.24	3.36	3.48	3.59	3.71	3.82	3.94	4.06	4.17	4.29	4.40	4.52	4.64	4.75	4.87	4.98	5.10	5.21	5.33	5.45	5.56
112	2.81	2.92	3.04	3.16	3.27	3.39	3.51	3.62	3.74	3.86	3.98	4.09	4.21	4.33	4.44	4.56	4.68	4.79	4.91	5.03	5.14	5.26	5.38	5.50	5.61
113	2.83	2.95	3.07	3.19	3.30	3.42	3.54	3.66	3.78	3.89	4.01	4.13	4.25	4.36	4.48	4.60	4.72	4.84	4.95	5.07	5.19	5.31	5.43	5.54	5.66
114	2.86	2.98	3.09	3.21	3.33	3.45	3.57	3.69	3.81	3.93	4.05	4.17	4.28	4.40	4.52	4.64	4.76	4.88	5.00	5.12	5.24	5.36	5.47	5.59	5.71
115	2.88	3.00	3.12	3.24	3.36	3.48	3.60	3.72	3.84	3.96	4.08	4.20	4.32	4.44	4.56	4.68	4.80	4.92	5.04	5.16	5.28	5.40	5.52	5.64	5.76
116	2.91	3.03	3.15	3.27	3.39	3.51	3.63	3.75	3.88	4.00	4.12	4.24	4.36	4.48	4.60	4.72	4.84	4.97	5.09	5.21	5.33	5.45	5.57	5.69	5.81
117	2.93	3.05	3.18	3.30	3.42	3.54	3.66	3.78	3.91	4.03	4.15	4.26	4.40	4.52	4.64	4.76	4.89	5.01	5.13	5.25	5.37	5.50	5.62	5.74	5.86
118	2.96	3.08	3.20	3.33	3.45	3.57	3.69	3.82	3.94	4.07	4.19	4.31	4.43	4.56	4.68	4.80	4.93	5.05	5.17	5.30	5.42	5.54	5.67	5.79	5.91
119	2.98	3.11	3.23	3.35	3.48	3.60	3.73	3.85	3.97	4.10	4.22	4.35	4.47	4.60	4.72	4.85	4.97	5.09	5.22	5.34	5.47	5.59	5.71	5.84	5.96
120	3.01	3.13	3.26	3.38	3.51	3.63	3.76	3.88	4.01	4.13	4.26	4.38	4.51	4.64	4.76	4.89	5.01	5.14	5.26	5.39	5.51	5.64	5.76	5.89	6.01
121	3.03	3.16	3.28	3.41	3.54	3.66	3.79	3.92	4.04	4.17	4.30	4.42	4.55	4.67	4.80	4.93	5.05	5.18	5.31	5.43	5.56	5.68	5.81	5.94	6.06
122	3.06	3.18	3.31	3.44	3.57	3.69	3.82	3.95	4.08	4.20	4.33	4.46	4.59	4.71	4.84	4.97	5.09	5.22	5.35	5.48	5.60	5.73	5.86	5.99	6.11
123	3.08	3.21	3.34	3.47	3.60	3.72	3.85	3.98	4.11	4.24	4.37	4.49	4.62	4.75	4.88	5.01	5.14	5.26	5.39	5.52	5.65	5.78	5.91	6.04	6.16
124	3.11	3.24	3.37	3.50	3.62	3.75	3.88	4.01	4.14	4.27	4.40	4.53	4.66	4.79	4.92	5.05	5.18	5.31	5.44	5.57	5.70	5.83	5.95	6.08	6.21
125	3.13	3.26	3.39	3.52	3.65	3.78	3.92	4.05	4.18	4.31	4.44	4.57	4.70	4.83	4.96	5.09	5.22	5.35	5.48	5.61	5.74	5.87	6.00	6.13	6.26
126	3.16	3.29	3.42	3.55	3.68	3.81	3.95	4.08	4.21	4.34	4.47	4.60	4.74	4.87	5.00	5.13	5.26	5.39	5.52	5.66	5.79	5.92	6.05	6.18	6.31
127	3.18	3.31	3.45	3.58	3.71	3.85	3.98	4.11	4.24	4.38	4.51	4.64	4.77	4.91	5.04	5.17	5.30	5.44	5.57	5.70	5.83	5.97	6.10	6.23	6.36
128	3.21	3.34	3.47	3.61	3.74	3.88	4.01	4.14	4.28	4.41	4.54	4.68	4.81	4.94	5.08	5.21	5.35	5.48	5.61	5.75	5.88	6.01	6.15	6.28	6.41
129	3.23	3.37	3.50	3.64	3.77	3.91	4.04	4.17	4.31	4.44	4.58	4.71	4.85	4.98	5.12	5.25	5.39	5.52	5.66	5.79	5.93	6.06	6.20	6.33	6.46
130	3.26	3.39	3.53	3.66	3.80	3.94	4.07	4.21	4.34	4.48	4.61	4.75	4.89	5.02	5.16	5.29	5.43	5.56	5.70	5.84	5.97	6.11	6.24	6.38	6.51
131	3.28	3.42	3.56	3.69	3.83	3.97	4.10	4.24	4.38	4.51	4.65	4.79	4.92	5.06	5.20	5.33	5.47	5.61	5.74	5.88	6.02	6.15	6.29	6.43	6.56
132	3.30	3.45	3.58	3.72	3.86	4.00	4.13	4.27	4.41	4.55	4.69	4.82	4.96	5.10	5.24	5.37	5.51	5.65	5.79	5.93	6.06	6.20	6.34	6.48	6.61
133	3.33	3.47	3.61	3.75	3.89	4.03	4.17	4.30	4.44	4.58	4.72	4.86	5.00	5.14	5.28	5.42	5.55	5.69	5.83	5.97	6.11	6.25	6.39	6.53	6.66
134	3.36	3.50	3.64	3.78	3.92	4.06	4.20	4.34	4.48	4.62	4.76	4.90	5.04	5.18	5.32	5.46	5.60	5.74	5.88	6.02	6.16	6.30	6.44	6.58	6.71
135	3.38	3.52	3.66	3.81	3.95	4.09	4.23	4.37	4.51	4.65	4.79	4.93	5.07	5.21	5.36	5.50	5.64	5.78	5.92	6.06	6.20	6.34	6.48	6.62	6.77
136	3.41	3.55	3.69	3.83	3.98	4.12	4.26	4.40	4.54	4.69	4.83	4.97	5.11	5.25	5.40	5.54	5.68	5.82	5.96	6.11	6.25	6.39	6.53	6.67	6.82
137	3.43	3.58	3.72	3.86	4.00	4.15	4.29	4.43	4.58	4.72	4.86	5.01	5.15	5.29	5.44	5.58	5.72	5.86	6.01	6.15	6.29	6.44	6.58	6.72	6.87
138	3.46	3.60	3.75	3.89	4.03	4.18	4.32	4.47	4.61	4.75	4.90	5.04	5.19	5.33	5.47	5.62	5.76	5.91	6.05	6.20	6.34	6.48	6.63	6.77	6.92
139	3.48	3.63	3.77	3.92	4.06	4.21	4.35	4.50	4.64	4.79	4.93	5.08	5.22	5.37	5.51	5.66	5.80	5.95	6.09	6.24	6.39	6.53	6.68	6.82	6.97
140	3.51	3.65	3.80	3.95	4.09	4.24	4.38	4.53	4.68	4.82	4.97	5.12	5.26	5.41	5.55	5.70	5.85	5.99	6.14	6.28	6.43	6.58	6.72	6.87	7.02
141	3.53	3.68	3.83	3.97	4.12	4.27	4.42	4.56	4.71	4.86	5.00	5.15	5.30	5.45	5.59	5.74	5.89	6.04	6.18	6.33	6.48	6.62	6.77	6.92	7.07
142	3.56	3.71	3.85	4.00	4.15	4.30	4.45	4.60	4.74	4.89	5.04	5.19	5.34	5.49	5.63	5.78	5.93	6.08	6.23	6.37	6.52	6.67	6.82	6.97	7.12
143	3.58	3.73	3.88	4.03	4.18	4.33	4.48	4.63	4.78	4.93	5.08	5.23	5.37	5.52	5.67	5.82	5.97	6.12	6.27	6.42	6.57	6.72	6.87	7.02	7.17
144	3.61	3.76	3.91	4.06	4.21	4.36	4.51	4.66	4.81	4.96	5.11	5.26	5.41	5.56	5.71	5.86	6.01	6.16	6.31	6.46	6.61	6.77	6.92	7.07	7.22
145	3.63	3.78	3.94	4.09	4.24	4.39	4.54	4.69	4.84	5.00	5.15	5.30	5.45	5.60	5.75	5.90	6.06	6.21	6.36	6.51	6.66	6.81	6.96	7.11	7.27
146	3.66	3.81	3.96	4.12	4.27	4.42	4.57	4.73	4.88	5.03	5.18	5.33	5.49	5.64	5.79	5.94	6.10	6.25	6.40	6.55	6.71	6.86	7.01	7.16	7.32
147	3.68	3.84	3.99	4.14	4.30	4.45	4.60	4.76	4.91	5.06	5.22	5.37	5.52	5.68	5.83	5.99	6.14	6.29	6.45	6.60	6.75	6.91	7.06	7.21	7.37
148	3.71	3.86	4.02	4.17	4.33	4.48	4.64	4.79	4.94	5.10	5.25	5.41	5.56	5.72	5.87	6.03	6.18	6.33	6.49	6.64	6.80	6.95	7.11	7.26	7.42
149	3.73	3.89	4.04	4.20	4.36	4.51	4.67	4.82	4.98	5.13	5.29	5.44	5.60	5.76	5.91	6.07	6.22	6.38	6.53	6.69	6.84	7.00	7.16	7.31	7.47
150	3.76	3.91	4.07	4.23	4.38	4.54	4.70	4.85	5.01	5.17	5.32	5.48	5.64	5.79	5.95	6.11	6.26	6.42	6.58	6.73	6.89	7.05	7.20	7.36	7.52
151	3.78	3.94	4.10	4.26	4.41	4.57	4.73	4.89	5.04	5.20	5.36	5.52	5.68	5.83	5.99	6.15	6.31	6.46	6.62	6.78	6.94	7.09	7.25	7.41	7.57
152	3.81	3.97	4.13	4.28	4.44	4.60	4.76	4.92	5.08	5.24	5.40	5.55	5.71	5.87	6.03	6.19	6.35	6.51	6.66	6.82	6.98	7.14	7.30	7.46	7.62
153	3.83	3.99	4.15	4.31	4.47	4.63	4.79	4.95	5.11	5.27	5.43	5.59	5.75	5.91	6.07	6.23	6.39	6.55	6.71	6.87	7.03	7.19	7.35	7.51	7.67
154	3.86	4.02	4.18	4.34	4.50	4.66	4.82	4.98	5.14	5.31	5.47	5.63	5.79	5.95	6.11	6.27	6.43	6.59	6.75	6.91	7.07	7.23	7.40	7.56	7.72
155	3.88	4.05	4.21	4.37	4.53	4.69	4.85	5.02	5.18	5.34	5.50	5.66	5.83	5.99	6.15	6.31	6.47	6.63	6.80	6.96	7.12	7.28	7.44	7.61	7.77

*The figures in this table are based on the following production data: Spinning front roll diameter, 1"; spinning contraction, 5%; winding drum speed, 1300 RPM; winding drum effective circumference, .9163 yards.

TABLE 2

Minutes Unwinding Time per Spinning Bobbin Based on Variable Winding Speeds in Proportion to the Figures in Table 1

Minutes unwinding time in Table 1	Winding drum speed (rpm)								
	400	500	600	700	800	900	1000	1100	1200
2.60	8.45	6.76	5.63	4.83	4.22	3.75	3.38	3.07	2.82
2.70	8.78	7.02	5.85	5.01	4.39	3.90	3.51	3.19	2.92
2.80	9.10	7.28	6.07	5.20	4.55	4.04	3.64	3.31	3.03
2.90	9.43	7.54	6.28	5.39	4.71	4.19	3.77	3.43	3.14
3.00	9.75	7.80	6.50	5.57	4.88	4.33	3.90	3.55	3.25
3.10	10.08	8.06	6.72	5.76	5.04	4.48	4.03	3.66	3.36
3.20	10.40	8.32	6.93	5.94	5.20	4.62	4.16	3.78	3.47
3.30	10.73	8.58	7.15	6.13	5.36	4.77	4.29	3.90	3.57
3.40	11.05	8.84	7.36	6.31	5.53	4.91	4.42	4.02	3.68
3.50	11.38	9.10	7.58	6.50	5.69	5.05	4.55	4.14	3.79
3.60	11.70	9.36	7.80	6.69	5.85	5.20	4.68	4.25	3.90
3.70	12.03	9.62	8.02	6.87	6.01	5.34	4.81	4.37	4.01
3.80	12.35	9.88	8.23	7.06	6.18	5.49	4.94	4.49	4.12
3.90	12.68	10.14	8.45	7.24	6.34	5.63	5.07	4.61	4.22
4.00	13.00	10.40	8.67	7.43	6.50	5.78	5.20	4.73	4.33
4.10	13.33	10.66	8.88	7.61	6.66	5.92	5.33	4.85	4.44
4.20	13.65	10.92	9.10	7.80	6.83	6.06	5.46	4.96	4.55
4.30	13.98	11.18	9.32	7.99	6.99	6.21	5.59	5.08	4.66
4.40	14.30	11.44	9.53	8.17	7.15	6.35	5.72	5.20	4.77
4.50	14.63	11.70	9.75	8.36	7.31	6.50	5.85	5.32	4.87
4.60	14.95	11.96	9.97	8.54	7.48	6.64	5.98	5.44	4.98
4.70	15.28	12.22	10.18	8.73	7.64	6.79	6.11	5.55	5.09
4.80	15.60	12.48	10.40	8.91	7.80	6.93	6.24	5.67	5.20
4.90	15.93	12.74	10.62	9.10	7.96	7.08	6.37	5.79	5.31
5.00	16.25	13.00	10.84	9.29	8.13	7.22	6.50	5.91	5.42
5.10	16.58	13.26	11.05	9.47	8.29	7.36	6.63	6.03	5.52
5.20	16.90	13.52	11.27	9.66	8.45	7.51	6.76	6.15	5.63
5.30	17.23	13.78	11.49	9.84	8.61	7.65	6.89	6.26	5.74
5.40	17.55	14.04	11.70	10.03	8.78	7.80	7.02	6.38	5.85
5.50	17.88	14.30	11.92	10.21	8.94	7.94	7.15	6.50	5.96
5.60	18.20	14.56	12.14	10.40	9.10	8.09	7.28	6.62	6.06
5.70	18.53	14.82	12.35	10.58	9.26	8.23	7.41	6.74	6.17
5.80	18.85	15.08	12.57	10.77	9.43	8.38	7.54	6.85	6.28
5.90	19.18	15.34	12.79	10.96	9.59	8.52	7.67	6.97	6.39
6.00	19.50	15.60	13.00	11.14	9.75	8.66	7.80	7.09	6.50
6.10	19.83	15.86	13.22	11.33	9.91	8.81	7.93	7.21	6.61
6.20	20.15	16.12	13.44	11.51	10.08	8.95	8.06	7.33	6.71
6.30	20.48	16.38	13.65	11.70	10.24	9.10	8.19	7.45	6.82
6.40	20.80	16.64	13.87	11.88	10.40	9.24	8.32	7.56	6.93
6.50	21.13	16.90	14.09	12.07	10.56	9.39	8.45	7.68	7.04
6.60	21.45	17.16	14.30	12.26	10.73	9.53	8.58	7.80	7.15
6.70	21.78	17.42	14.52	12.44	10.89	9.67	8.71	7.92	7.26
6.80	22.10	17.68	14.74	12.63	11.05	9.82	8.84	8.04	7.36
6.90	22.43	17.94	14.95	12.81	11.21	9.96	8.97	8.15	7.47
7.00	22.75	18.20	15.17	13.00	11.38	10.11	9.10	8.27	7.58
7.10	23.08	18.46	15.39	13.18	11.54	10.25	9.23	8.39	7.69
7.20	23.40	18.72	15.60	13.37	11.70	10.40	9.36	8.51	7.80
7.30	23.73	18.98	15.82	13.56	11.86	10.54	9.49	8.63	7.91
7.40	24.05	19.24	16.04	13.74	12.03	10.69	9.62	8.75	8.01
7.50	24.38	19.50	16.25	13.93	12.19	10.83	9.75	8.86	8.12
7.60	24.70	19.76	16.47	14.11	12.35	10.97	9.88	8.98	8.23
7.70	25.03	20.02	16.69	14.30	12.51	11.12	10.01	9.10	8.34
7.80	25.35	20.28	16.90	14.48	12.68	11.26	10.14	9.22	8.45

$$\frac{\text{Ounces per full bobbin} \times 36 \times 840 \times \text{yarn count}}{1^{*} \times \text{front roll speed (rpm)} \times 16 \times 3.1416 \times 60 \times (1.00\text{-contraction})} = \text{Hours running time per doff on spinning frame.}$$

*Based on 1 in. front roll diameter.

values of Table 1 (rounded off to the nearest 1/10 minute rewinding time), by using winding speeds ranging from 400 rpm to 1200 rpm, instead of the 1300 rpm on which Table 1 is based.

By the combined use of Tables 1 and 2 we have a complete plan of expected rewinding time, given the variability of spinning speeds, spinning running time, and winding speeds. This makes it possible to adjust the "machine cycle" to the most advantageous duration for a given package size, or if this is not feasible, to tailor the size of the package to fit the "machine cycle" for the highest efficiency.

The figures in these tables are applicable to any yarn count. Inasmuch as the yards on a given spinning bobbin are only a function of the front roll speed and the running time (allowing, of course, for contraction), it is not necessary to calculate a separate set of values for each yarn number.

However, it is obvious that the yarn count has a very profound effect on running time, given a certain package size and front roll speed. Where this information is not known in advance, the equation in the accompanying box will yield the desired data.

Assume that we are planning to spin 16s yarn at a front roll speed of 150 rpm, and that our maximum package size capacity is 10 ounces. Let us also assume a 1 in. front roll, and a spinning contraction of 5%; our equation then becomes:

$$\frac{10 \times 36 \times 840 \times 16}{1 \times 150 \times 16 \times 3.1416 \times 60 \times .95} =$$

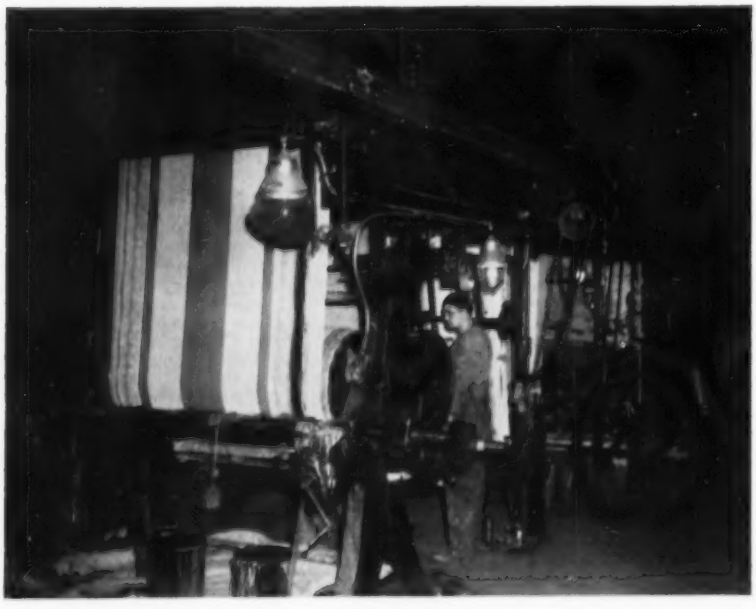
11.258 hours running time.

Then we consult Table 1, and find in the 11¼ hours column that one bobbin will take 7.05 minutes to unwind. We want to be sure that one machine cycle (or its multiples) will slightly exceed 7.05 minutes. If this is not feasible, we can refer to Table 2, and by interpolation find the proportionate unwinding time at other winding speeds.

If this does not yield the desired equilibrium, we may wish to reduce the package size slightly. By substituting say 9.8 instead of 10 ounces in the above equation we shall obtain a different running time which in turn will lead to the most efficient adjustment.

Instead of being tied down to unchangeable maximum package sizes and speeds, we are now in a position to manipulate all our variables and thus to take advantage of the flexibilities to which our machinery lends itself.

This mill does one-step printing, drying, and curing

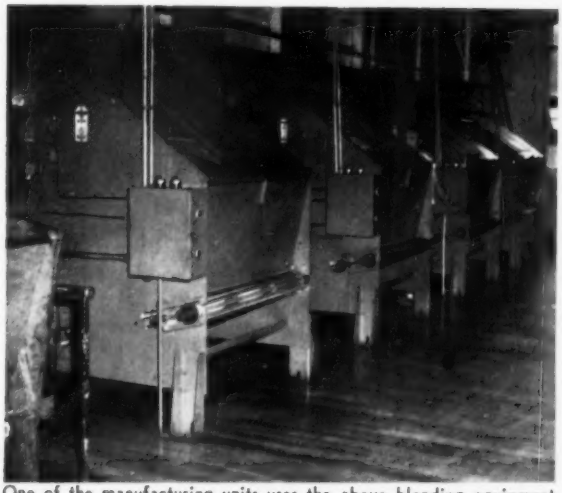


■ PICTURED here is one of five printing ranges at the P. and S. Processing Company, Inc., Brooklyn, N. Y., where printing, drying, and curing of fabrics are completed in one operation.

The fabric being processed when this photo was made is an 80 x 80 cotton; emulsion pigments were being utilized.

After printing, the goods pass immediately into the drying-curing unit where curing of the pigment-binder takes place at a temperature of 280 F for a period of 1½-2½ minutes. When cured, the goods are batched and inspected before finishing or shipment.

Other printing processes, utilizing various classes of colors in addition to emulsion pigments, are also carried out on vinyl film and all types of fabrics.



One of the manufacturing units uses the above blending equipment on all types of fiber, and with good results. Usually a 24-bale mix is laid out on the floor of this room.

A tinting unit sprays the stock with tint or oil, as required, just after the stock leaves first blenders. From here the fiber is carried to the chute leading to the bale press.

At Waverly Mills flexibility is

one key to blending synthetics

Staff prepared
Exclusive

WAVERLY Mills, Inc., Laurinburg, N. C., has been organized progressively to its present position of flexibility in making a wide range of yarns from man-made fibers. The range includes most counts from .90s carpet yarn to the 40s range in the different manufacturing units.

Ply yarns range from 2-ply to 15-ply; and package sizes run from 2-11 pounds on tubes and cones (including 6″ traverse on 7½″ diameter, and 8″, 9″, and 10″ traverse) to maximum diameter of about 11″.

Blending feeders are used in one unit; and mixes containing several synthetics start the blending here with automatic weighing. Examples of blends are: 50%, 15-denier, 3″ dull viscose; 40% 8-denier, 3″ bright viscose; and 10% 6-denier, 2″ nylon. Another contains 75% solution-dyed viscose, and 25% natural viscose, each of these being a blend of two thirds dull and one third bright viscose. The dull is 15-denier, and the bright is 8-denier, 3″ staple.

When blending is done on the blending feeders, a minimum of 18 bales is used. The bales are opened and fed with no conditioning except the application of an emulsified lubricant, which also helps improve fiber cohesion in processing.

Two per cent emulsion solution by weight is applied to the stock, and this amounts to about 0.5 per cent oil on weight of stock. The emulsion is applied by a tinting apparatus in the line just before the stock enters the chute to the bale press.

No changes have been found necessary on the blending equipment which handles man-made fibers well, according to J. B. Griffin, general superintendent.

Another manufacturing unit of this mill group uses other blending equipment with good results on viscose-acetate, Arnel-nylon, nylon-viscose, Dacron-cotton, Orlon-cotton, and Dacron, Orlon, and viscose blends. About 24 bales are laid out for blending in the Proctor and Schwartz units—no changes were found necessary in this equipment for running man-made fibers.

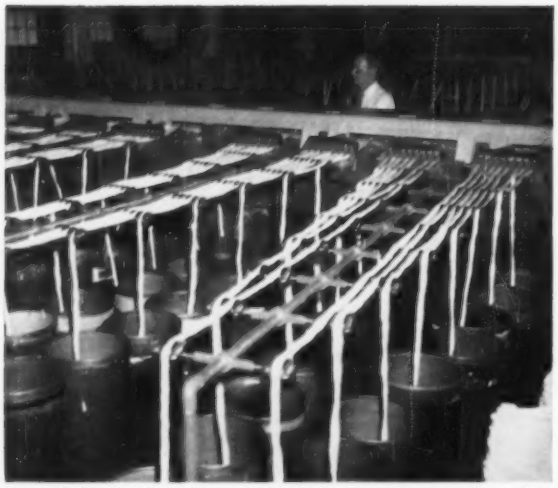
This mill uses two- and three-beater one-process pickers. Tints are used to identify stock in process containing specific fiber blends, and the tints are applied by the tinting apparatus in the line of blending feeders in one plant.

Some blending for heather yarns is done at drawing where 25 per cent of a blend of solution dyed and 75 per cent of natural viscose of 1 9/16″ staple, 1½-denier are blended, for example. With eight ends up at drawing, this means two ends of solution dyed stock comprise the 25 per cent ingredient.

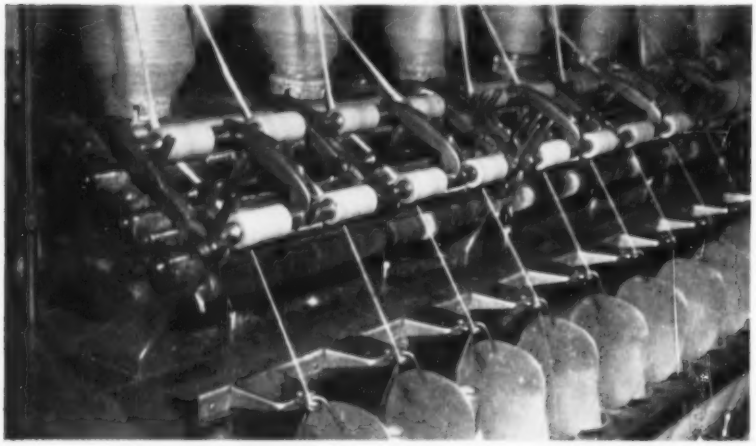
Regardless of denier, relative humidities maintained in processing areas are as follows: opening, picking, and carding, 55 per cent; drawing, roving, and spinning, 55-60 per cent; weaving 70-80 per cent.

Partitions of plastic curtains are used to isolate different stocks in process to prevent contamination by fly migration. Also, stored stock in process is carefully cov-

This equipment provides automatic weighing of the stock put into the blend. These units deposit the stock on an apron which delivers it to the chute leading to the bale press.



Some of the blending is done at drawing. Here blends such as 25% solution-dyed staple and 75% natural staple are prepared. The heather mix resulting contains 1½ denier, 1 9/16" staple.



A modified Howard & Bullough four-roll drafting system (above) utilizes "jump saddles" to permit drafting fibers up to three inches in length. Below is a view of some of the partitioning used to prevent cross-contamination of the various areas operating on different stock.

ered with plastic material which is placed over roving carts or whatever containers the stock may be in. Sliver and roving cans are stored upside down when not in use to prevent accumulation of fly.

Johnson seven-can steam slashers are operated at 8-30 yards per minute, depending on the set. A typical set would include 6 beams of 22s, including 2496 ends of viscose and another man-made fiber. Another example is: six beams of 16s, including 2412 ends of 100 per cent viscose. Eight beams of 30s viscose would include 3500 ends.

Sizing ingredients include thin boiling starch, wax, penetrant, calcium chloride, and a mildew preventive. Each different set or combination of counts and fibers requires a different formula. Sizing ingredients used on Dacron and Orlon include gum, a chemical to keep the size on the outside of the yarn, wax, industrial size, penetrant, calcium chloride, and a mildew preventive.

Temperature is kept at about 200 F in the size box. Slasher cans 1 and 2 are run at 220 F; cans 3, 4, and 5 are kept at 230 F; cans 6 and 7 are operated at 200 F. The most frequently used operating speed for the slasher is 28 ypm. The two back cylinders (entering cylinders) are coated with Teflon to prevent sticking; and rubber squeeze rolls are used on both front and back. A Moisture

Monitor used on synthetics helps maintain uniform results.

Cotton system equipment is used throughout this mill and accounts for much of the flexibility in handling blends of all kinds of fibers. Spinning frames with converted drafting elements have "jump saddles" to permit handling 3" staple in the Prince plant. The jump saddles merely eliminate the middle roll in the drafting action.

The Waverly plant is equipped with new spinning frames which run staples up to 2 inches in this instance. The draw frames are also new, and these machines are credited with excellent quality at high production speeds.

Draper dobby looms weave goods up to 54 inches.

Details of new cotton opener-cleaner available

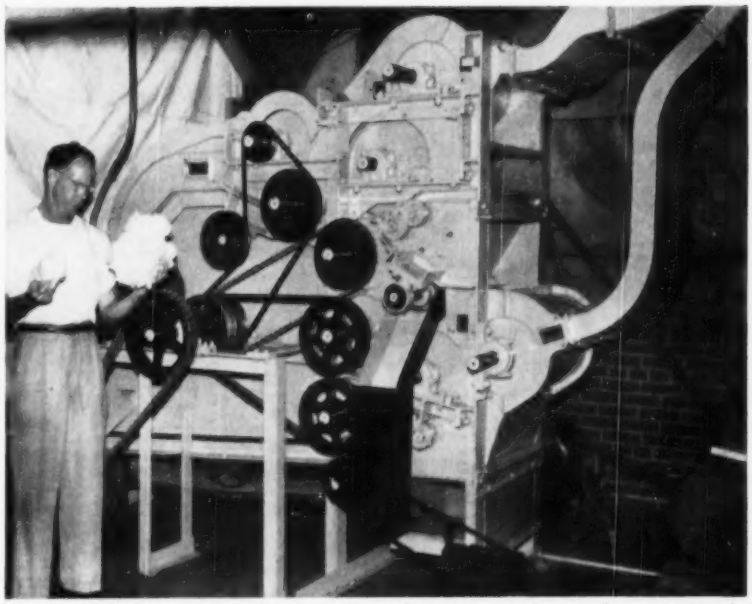
■ A NEW machine for cotton textile mills, combining "superior bale-opening and blending abilities with outstanding efficiency in cotton cleaning," has been developed by cotton-utilization specialists of the U. S. Department of Agriculture.

Designed by Ralph A. Rusca and Ray C. Young at USDA's Southern Utilization Research and Development Division in New Orleans, La., it retains all the advantages of the earlier SRRL Cotton Opener, another invention of Messrs. Rusca and Young. In addition, the new machine—known as the SRRL (Southern Regional Research Laboratory) Opener-Cleaner — operates at high cleaning efficiency and with only half the lint loss of existing textile cleaning machines, the announcement stated.

The high performance of the opener-cleaner is indicated by the fact that it has an average cleaning efficiency of 35 per cent, and that the waste it removes contains about 86 per cent trash and only 14 per cent lint and short fibers. This performance is achieved at no increase in horsepower and only slightly more floor space than that required by the original opener.

The SRRL Opener-Cleaner utilizes four opening-blending cylinders and two cleaning cylinders of the card licker-in type. Each cleaning cylinder is equipped with two combing rolls and a series of conventional grid-bars applied in an unconventional manner. Doffing the cotton is accomplished by revolving strip-type brushes, which cannot damage the teeth of the cleaning cylinders.

The machine can be constructed in sizes to process 750 to 2,500 pounds of cotton per hour. The 1,500-pound size is physically the same height and width as a standard 34-inch model SRRL Opener and is only 18 inches longer.



How the SRRL Opener-Cleaner opens tightly packed cotton can be seen by comparing the samples held by the technician pictured at the extreme left. The small sample in his right hand came from a bale; the fluffed-up cotton in his left hand is a sample of the opened and cleaned lint delivered by the machine.

While the new opener-cleaner affords a marked increase in the efficiency of cotton processing, the outlook is good for still further improvements, say USDA researchers. Tests of a simple laboratory-size aerodynamic cleaning unit at the New Orleans laboratory indicate the possibility of increasing the cleaning efficiency of the machine from its present 35 per cent to 45 per cent by the addition of this feature.

USDA textile engineers estimate that another year will be required to evaluate this aerodynamic cleaning unit thoroughly and—if it proves successful—to incorporate it into the design of the opener-cleaner. When the aerodynamic cleaner becomes available it can be added to opener-cleaners already installed in mills.

The principle of the SRRL Opener-Cleaner is covered by U. S. Patent No. 2,780,839 which is available for license from the Secretary of Agriculture on a royalty-free nonexclusive basis. Copies of the patent may be obtained from the U. S. Patent Office at 25 cents each. Engineering drawings and technical specifications for the machine may be obtained by licensees without cost from the Southern Utilization Research and Development Division, P. O. Box 7307, New Orleans 19.

The causes of imperfections in dyeing and finishing woolen and worsted fabrics and how to correct them

FABRIC DEFECTS IN WOOL FINISHING

Part 1—Wet Finishing

by Richard G. Stoehr

Vice-president and general manager
Botany Finishing Co.
Passaic, N. J.

Exclusive

FINISHING is an operation which effects a considerable change in the appearance and intrinsic value of a woolen or worsted fabric. Therefore, the sequence of operations chosen by the finisher plays an important role. He first must have a clear picture, in the form of a sample, of the objective desired. Whenever a new sample is to be finished, we hold a general discussion covering the finish desired, means of arriving at the finish, and the cost of the finish.

There are a large number of tools available, and improper selection is one of the greatest imperfections which can arise in finishing. Many operations are dependent on previous handling, and therefore must come in proper sequence, in addition to being properly executed.

Considerable benefit can be gained by the proper instruction of the individual machine operator in regard to the purpose of his operation and the results of errors in handling. This can best be achieved through the instruction of the foremen and assistants. With this in mind, we held weekly classes and discussions with the foremen, which from all reports were both beneficial and well received.

On the whole, the average operation in finishing is simple in the mechanical sense, but important in its effect on the cloth. Because of this condition, unique imperfections arise which, when traced down, show a mistake in handling by the operator. Until this mistake is corrected, a large number of pieces can be processed; therefore, all effort must be quickly expended to stop the imperfection at its source.

Most imperfections can be corrected by proper refinishing. This is both costly and a delay in delivery and must, therefore, be avoided as much as possible.

Wet finishing

FULLING

Uneven Fulling

Effect. As the name implies, uneven felt or cover on the cloth appears as a blotchiness or cloudiness on the cloth.

Cause. Uneven soaping prior to fulling in the soaping machine, the use of too heavy a soap in cases where the pieces are entered dry into the mill, thereby delaying an equal distribution of soap in the cloth.

A heavy soap will cause places

operations

it contacts to start fulling earlier than the dry spots. Once the inequality exists, it is difficult to overcome.

Correction and Prevention. Correction of this condition once it exists in a piece of cloth is very difficult. About the only correction is to scour the cloth, dry, shear to an even cover, and refull in an attempt to equalize the unevenness. This is, however, only successful in very light cases.

Prevention is in proper soaping in a soaping machine prior to fulling. In certain cases of a difficult fulling style (where blends of mohair or other smooth fibers are present) it is advisable to wet the pieces out with water on a padding machine prior to soaping. This wetting out will give a uniform moisture and will allow the soap to penetrate the cloth evenly. After this, the cloth should full evenly.

Effect of Hot Soap

Hot soap will cause uneven fulling as described above, in both top dyed and piece dyed goods. In addition, it will cause cloudiness.

Soap by nature is alkaline, and the heat plus alkalinity will affect the color to give it this cloudy appearance. The reason that ordinary fulling does not result in this cloudiness is the uniformity of soap distribution.

Shrinkage

In fulling, two shrinkages must be taken into consideration — length or head, and width. Since the cloth, in further operations, is subjected to tension in the length, the reason for the following is obvious.

Length shrinkage should precede width shrinkage. Fulling the width in last binds the length shrinkage and holds the felted fiber more firmly, to withstand the tension or pull-out. However, there must be a ratio of length and width shrinkage and not all length and then all width, otherwise an unevenness of cover will appear.

In most cases, both length and width will shrink in easily, as the tension from the loom is released by the moisture, heat, and friction, which are the three elements in fulling.

Control

Careful calculations and measurements are essential for proper fulling control. The proper shrinkages must be determined by the foreman or finisher, allowing for subsequent pull-out and operation. This percentage is then posted at the fulling mill and checked there by the operator.

There are two methods for control; first, a hand clock is employed which is used to measure the entire length of the piece. This hand clock is a measuring device which is run by the motion of the cloth driving a wheel, which records the yardage. The pressure with which the operator holds this clock against the cloth governs somewhat his result. Spot checks on a measuring machine are made to inform the operator whether he is constant in his measuring.

The second method is to tape an exact yard prior to fulling and measure the shrinkages of this given yard. Either way is suitable and is used, depending on the

The Wool Bureau

In the dolly washer, uneven scouring results in streaky, shady, or cloudy dyeing. Uneven distribution of soap, insufficient soap, and improper or insufficient rinsing are some causes.

training of the operator.

Spot checks of shrinkage are made on a measuring machine when the set is completed. Without proper control in fulling, the delivery would be too varied—either too felted in cases of overfulling, or too bare in cases of underfulling.

Damage in Fulling

Holes are caused by five major items: excessive dryness, excessive soap, foreign particles in mill, loose blocks on rolls, or improper relation of crimp box to rolls.

Wool requires moisture for lubrication in fulling, a lack of this lubrication in the form of soap results in *split holes*.

Excessive soap or lubrication causes slippage between the rolls, causing *chafe holes* when the cylinders revolve on a given spot of cloth. Crimp boxes too close to the rollers will result in fulling nips.

Foreign particles in the machine can be picked up by the cloth, imbedded in rolls and punch holes in the cloth on each revolution.

Loose blocks would have a similar effect.

SCOURING

Uneven Scouring—Dolly Washer

Effect. In cases of piece dyes (all types), uneven scouring results in streaky, shady, or cloudy dyeing, due to the unevenness and excess of free fat. This free fat resists the level penetration of the dyestuff. Top dyes are also affected with a cloudy appearance.

Cause. Improper distribution of soap, insufficient soap, rinsing before all the impurities are suspended in the soap lather, or insufficient rinsing.

Prevention. Pieces which are run through the soaper before scouring, or pieces which are thoroughly wet out by running in water prior to the addition of soap should scour evenly. A rough explanation of the principles of scouring is necessary to show the prevention of unevenness.

The purpose of soap in scouring is to emulsify the impurities which are in the grease cloth; namely, wool grease, spinning emulsion, and loom stains. This emulsification is aided by the introduction of alkali, which is in the soap.

After this emulsification, the impurities are held in suspension by the soap and are carried away in the rinsing. It is important that the rinsing take place at the point when most of the impurities are in suspension, otherwise the soap will break down and these impurities are again released to filter back into the cloth.

Insufficient soap will therefore not suspend all the impurities, resulting in uneven scouring. Insufficient rinsing has an effect similar to insufficient soap, with the addition of an excessive soap-fat content.

Uneven Scouring—Continuous Washer

Because of the nature of this machine, uneven scouring is rarely encountered. We have not had any such difficulty with our machine.

The uniform conditions under which cloth is scoured prevent any unevenness. Piece dye goods are run through a soaper and carry the necessary soap into the washer; fulled goods are scoured utilizing the fulling soap. There are no chemicals or soaps to be added by the operator.

The thoroughness of the agitation, which is an important factor in scouring, and the same action on each piece forestalls any unevenness. The agitation obtained in this washer is unique in the respect that it simulates the action of a scrubbing board. This is accomplished by a forward and backward movement between pressure rolls, which actually scrubs each piece uniformly and also changes the position of the cloth. The rinsing action of the water being constantly flushed through the cloth makes possible the high production and uniform results not obtainable in the conventional machine.

Unclean Goods

Effect. In piece dyed goods, unclean goods result in crocking, unlevel dye, and poor handle. In top dyed goods, blurred colors, poor handle, and offensive odor result.

Causes — Dolly Washer. The causes are similar to those for uneven scouring, except that in this case the entire piece is unclean, and not only portions of the piece.

Prevention. Numerous points must be covered in correcting this fault. In addition to the previous paragraph dealing with uneven scouring, there are such points as hard water, destruction of soap by acid. A quick check, which is made at the machine by the operator, is to drop a few drops of phenolphthalein into a sample of the rinse water. If this turns reddish, it is an indication that the rinsing is not sufficient and that alkali in the form of soap is still present. A clear test shows that the goods are ready to be taken out of the machine.

Hard Water Lime Deposits

Cause. Hard water leaves a lime deposit on the cloth, in addition to improper cleansing. This lime deposit can be the cause of shadiness, cloudiness, sticky handle, and odor, in both piece dyes and top dyes. This deposit resembles a soap curd and is readily discernible in the washing machine.

Correction. The only effective remedy for cloth in this condition is a rinse in a dilute solution of muriatic acid.

Prevention. This consists of a constant check on the condition of the water used in scouring. Such a condition is naturally of equal importance to both types of scouring.

Destruction of Soap

Cause. The cause for this (same in dolly and continuous washers) generally takes place in the fulling mill, where an inferior soap breaks down through long running. Soap in this condition reverts back to its original state and is difficult to remove in scouring. Therefore, this is usually blamed to faulty scouring.

Soap, being alkaline, is also destroyed by the presence of acid in the cloth when it comes into contact with the soap.

Effect. Blotchiness after piece dyeing and cloudiness in top dyes. This blotchiness is in the form of resist, due to the fats and oils which are left in the cloth.

Correction and Prevention. Careful attention at the fulling mill to the condition of the soap and proper addition to keep the soap "alive," especially at the completion of fulling, to insure a good bodied soap for scouring. Careful neutralization after carbonizing if a scouring is to follow, or a pH check of the cloth should there be any question of acid being present, will avoid the destruction of soap from this cause.

The Wool Bureau

Vacuum bars—dark bars running across the piece—are caused by stopping the scutcher and not breaking the vacuum. These bars are removable by hand cleaning and rewashing the goods.

Holes and Tears

Dolly Washer. Loose screws protruding on the reel or in the tub of the washer are a source of holes or damages. A regular weekly check on the machines is a good policy.

Tangles in the cloth result in tie-ups. In most cases the tangle causes the rake or knock-off motion to stop the machine, and prevents chafe marks. However, since this knock-off is mechanical and is pulled by the weight of the cloth, it is possible for the cloth to remain motionless while the rollers revolve, causing chafe marks or tears.

Continuous Washer. Loose screws or parts in the machine can

also cause damages, but the same check as in the dolly washer will curb this damage.

Tangles and empty supply boxes can also occur in the continuous washer; however, since the electrical knock-off motion is much more sensitive, the possibility of damage is greatly reduced.

Wrinkles

Cause—Dolly Washer. The principal cause is the failure of the cloth to change position as it runs in the machine. Constant running on the same folds will result in permanent or semipermanent wrinkles. This can be caused by too much soap, which "plasters" the cloth into one position for a period of time.

Excessive top roll pressure will crack the cloth, with wrinkles as a result.

The Wool Bureau

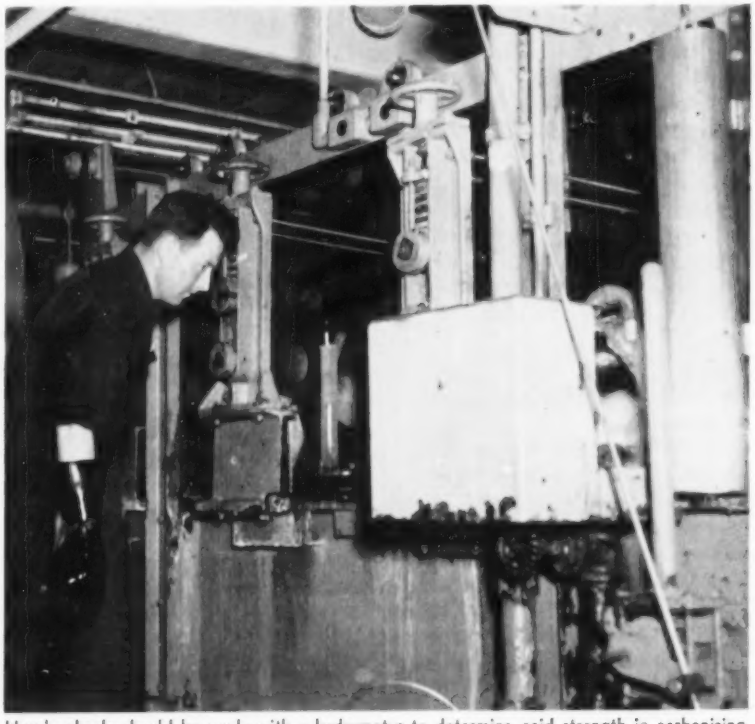
Insufficient acid, poor impregnation of the acid into the vegetable matter, or insufficient heat will cause imperfect carbonization. Thorough wetting out insures good penetration.

Vacuum Bars

Cloth is run over a vacuum slot on the scutcher to extract all water possible before tentering. Vacuum bars are dark bars running across the piece and are caused by stopping the scutcher and not breaking the vacuum. The continued vacuum on one spot draws all dust and flyers in the air through the cloth, leaving a bar.

These bars are removable by hand cleaning and rewashing. Automatic control, which breaks the vacuum immediately when the scutcher stops, overcomes this difficulty.

Light-weight cloth does not require as high a vacuum for proper extraction, and unless this is regulated the cloth will be partially sucked into the vacuum slot, also causing discoloration.



Hourly checks should be made with a hydrometer to determine acid strength in carbonizing, if electrical controls are not used. Acid stronger than 3° to 3½° Be'. may damage the wool.

CARBONIZING

Tender Goods

Sulfuric acid will damage wool fibers if it is used in too strong a solution. The proper strength is from 3° to 3½° Bé. Microscopical analysis shows fiber damage beyond this strength.

Particular care must be taken when mohair or similar smooth fibers are blended with wool. Unless electrical controls are employed, hourly checks must be made with a hydrometer to determine the acid strength.

In addition to high acidity, excessive temperature in the drying or baking chambers will tender wool. Automatic controls go a long way in overcoming this cause.

Discolored Goods

There are two variations of this fault: first, top dyes in which the color bleeds or shifts; and second, piece dye goods which dye unevenly because of uneven penetration of acid, or which are yellowed because of prolonged exposure to high temperatures. In addition, pieces which contain acid will discolor if allowed to remain in direct sunlight for any prolonged time.

Before carbonizing top dyes, tests should be made on samples to determine whether the color is fast to carbonizing.

Thorough wetting out and even extraction before immersion in the acid bath insures even penetration. If storage of cloth is necessary before dyeing, it should be in a darkened room to protect it from sunlight.

Streaky Goods

This is commonly caused by folds in the cloth when it is passing through the acid box and extraction rolls. These folds leave an uneven amount of acid, and in subsequent dyeing this unevenness is brought out by the varied affinity of the cloth for the dyestuff.

The operator must exert constant vigilance for this condition in the acid box.

Imperfect Carbonization

Briefly, carbonization is the penetration or soaking of vegetable matter in wool with an acid, followed by baking. This reduces the vegetable matter to carbon, which is then dusted out.

Therefore, insufficient acid, poor impregnation of the acid into the vegetable matter, or insufficient heat will cause imperfect carbonization.

Holes

Hydraulic cylinders are used to extract excess moisture and acid. Therefore, any foreign matter which is embedded in the cylinders will cause repeating holes in the cloth.

This damage is not common.

Uneven napping can be caused by uneven tension, worn out or dull wire, and poor cropping at the shear between napper runs. It is difficult to correct without damaging the goods.

Tears

Any unevenness in tension will cause tie-ups or tears in the cloth. Since the cloth is not guided on a pin or clip chain, a certain amount of tension is necessary to carry the cloth through the machine. However, proper tension control such as is used on modern machines regulates this to the minimum amount.

There is always the danger that cloth will wrap around one of the rolls in the drying or baking chambers, and therefore a good policy is to have a patrol-man as a lookout.

Spots and Stains

This is divided into two groups—spots occurring in the machine, and stains appearing in the cloth in the form of a resist which shows up only after dyeing.

Spots can be caused in the machine by condensation in the chambers due to improper exhaust or oil droppings from top rollers from careless lubrication.

More important are resist stains which are caused by drops of water coming into contact with the acid-soaked cloth. This water creates a dispersion of the acid. After dyeing, this stain is characterized by a lightly-dyed center darkening to a heavy outer circle.

The reason for this is that the acid is carried by the water and the acidity is increased at the outer edges of the spot, creating a greater affinity for dyestuff at the outside and a lesser affinity where the acid is weakest, in the center of the spot.

The opposite of acid stain is an alkali stain. This is caused by an alkali coming into contact with cloth while it is in acid. The appearance of such a stain is very irregular, the line of the stain ending where the action of alkali is dispelled by the acid in the cloth.

An alkali stain is also characterized by a lighter shade caused by the lack of acid preventing a thorough penetration of dyestuff.

Both acid and alkali stains seldom are corrected through redye or repair, once they exist in the cloth.

NAPPING

Uneven Napping

Uneven tension will cause uneven napping, therefore, sections which are not in contact with the teasel or wire will show less nap. This applies particularly to wrinkled goods. The wrinkles will get more working by the napper, will be napped unevenly, and will be streaky.

In cases where the napping or teaseling is done wet, the cloth has to be evenly wet; otherwise the dry sections will have a greater loss of fibers and will appear thin.

Uneven napping may also be caused by worn out or dull wire. The condition of the napping wire

Look for your index of 1957 TI articles

in the January, 1958, issue. This subject index of the principle articles published in TEXTILE INDUSTRIES during 1957, along with a subject listing of the new equipment and materials made commercially available, will be published so that the readers who preserve their copies of TEXTILE INDUSTRIES may quickly locate articles in which they are interested. For those who do not preserve their copies of the magazine, the index will still be useful, since copies of TI are on file in the majority of the public libraries in the textile manufacturing areas.

THE EDITORS

must be checked to see whether regrinding or replacement is necessary.

The type of cloth and its construction should be taken into consideration when adjusting the action of the napper. Certain types of cloth with finer stock must be napped gradually to avoid unevenness of nap. Other types such as fleeces, with coarser stock, should be napped in short order to prevent excessive dead loss.

The cloth with finer stock usually has a better knit felt on which to work. This felt must be brought out slowly in napping or teaseling.

The fleece is of a more open construction with loosely twisted yarn and comes up readily in napping. Because of this openness, it is susceptible to shedding of fiber, or dead loss. Should a fine cloth with good felt be napped too quickly, it has a tendency to "bounce" from the action of the napper, causing unevenness of cover.

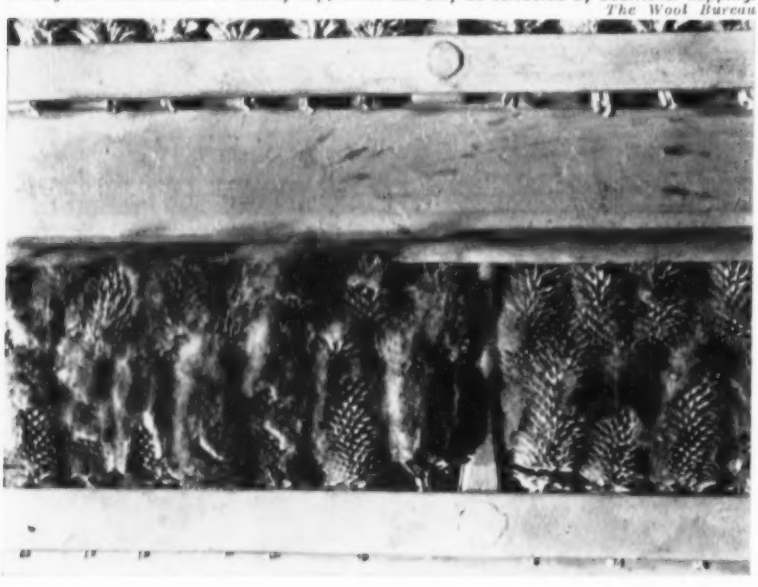
The opposite is the case with a fleece—prolonged napping, with its increased dead loss, will cause thin spots, which appear as uneven nap.

Poor cropping on the shear in between the napping operation may also be a cause for uneven nap.

Since napping is an operation which, in most cases, takes away tensile strength, it is very difficult to correct uneven nap, which could only be done by additional napping.

In teaseling, the setting of the teasels in the slats is an important operation; improper setting can cause uneven or streaky nap.

In teaseling, the setting of the teasels in the slats is an important operation; improper setting can cause uneven or streaky nap, which can only be corrected by additional napping. *The Wool Bureau*



Tender Goods

As mentioned before, napping is an operation which causes fiber loss, with a resultant reduction in tensile strength. Part of the operator or foreman's duty is to check the strength after every few runs on the napper or teasel gig.

Again, tenderness is more likely to occur in fleeces or similar types of cloth which do not present a well-knit and felted surface to the napper.

The quickest way to tender a piece of cloth is to continue to nap until the filling yarn is practically cut through. This is not true in the case of a special construction, such as chinchilla, where the filling has to be cut to make possible the chinchilla effect. Improper side-to-side adjustment of the napper will cause tenderness on one side only of a piece of cloth. This will also show up as uneven nap, side to side.

Once a piece of cloth becomes tender through improper napping, nothing can be done to correct the condition.

Spots, Stains, and Linty Cloth

Aside from the usual grease spots which careless lubrication could cause in any operation, there are two other types of stains which are peculiar to napping. One is a rust stain which is exceedingly difficult to remove. This is caused by the tips of the wire becoming rusty through idleness or insufficient protection.

The other is oil from the wire being worked into the cloth, when the wire was protected but not cleaned before napping. Both of these are important to avoid, because they affect the entire face of the cloth and are difficult to remove.

Unless certain machines are segregated from white napping, the napping lint will be carried through the air and worked into the face of a colored cloth, causing a linty appearance.

(In the January, 1958, issue, the causes of imperfections in dry finishing woolen and worsted fabrics will be discussed.—The Editors.)

Fabric Research Laboratories translate scientific theory into mill practice

The new look in textile research

Staff prepared Exclusive

AT THE forty-seventh annual meeting of the American Society for Testing Materials in 1944, the late Harold De Witt Smith was the guest speaker. It was a memorable event for the textile industry and, in particular, for textile science, because it was the first time that textile science had been chosen to express itself in a Marburg Lecture, the purpose of which is to review "outstanding developments in the promotion of knowledge of engineering materials."

In that lecture Smith said in part, ". . . an engineering approach to the design and utilization of textile fibers, yarns, and fabrics is needed in order to blend textile craftsmanship with modern textile science if the industry is to exploit its opportunities and meet its obligations."

When Smith spoke these words, research on textiles as engineering materials had barely started. Yet, in 1955 when textile science was again the subject of the Marburg Lecture, Walter J. Hamburger, another leading authority in this field in the tradition of Harold De Witt Smith, prefaced his remarks by saying, "The magnitude of the contribution made during this brief number of years [since Smith's lecture in 1944] is brought sharply into focus, since it appears that more has been achieved, scientifically speaking, in these eleven years past than in the entire previous history of the textile industry."

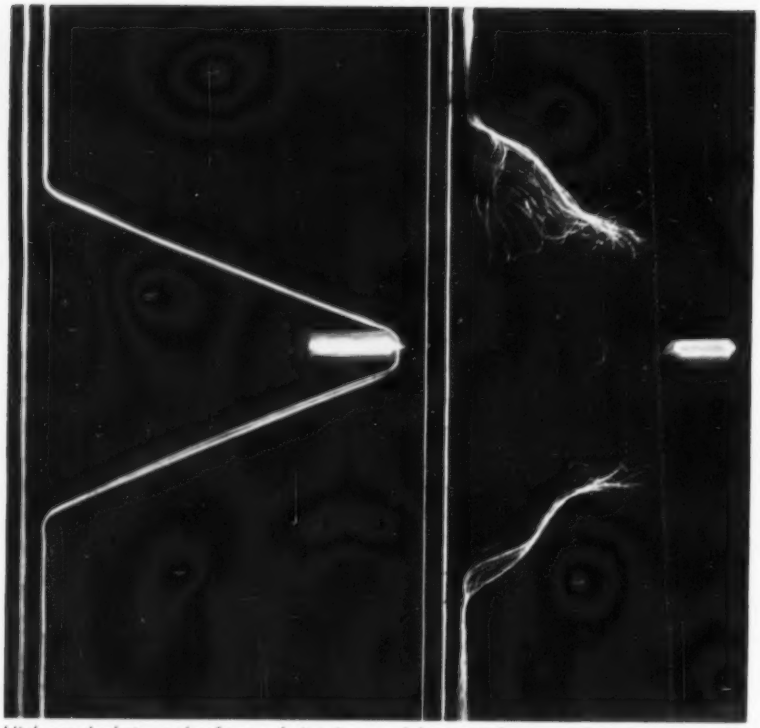
It is not the purpose of this article to review the Marburg Lectures of 1944 and 1955. Rather, it is to show by indicating the expansion of one research and development organization that the textile industry, guided by enlightened research and practical application, is advancing—not declining. The degree of advance is dependent upon the support given to textile research by the leaders of industry.

DR. HAMBURGER, the 1955 Marburg Lecturer, is director and treasurer of Fabric Research Laboratories, Inc., Dedham, Mass., which he and two associates founded in 1942, two years before Smith's classic lecture. The story of the Dedham Laboratories should be a stimulation to those in the textile industry who are inclined to cry "wolf" during brief periods of depression or recession in business.

The Laboratories were founded when textiles as an engineering science was little more than a theory. Opinion in the textile industry was that men who talked in terms of the future potential of present theory were "longhairs" who might in a period of years offer something to the industry in general, but could offer nothing specifically to the solution of practical problems.

Disproving this opinion, Fabric Research Laboratories proceeded not only to translate theories into practice but to combine basic and applied research and development with an emphasis on practical application. In short, not only were tremendous contributions made to the engineering and science of textiles, but specific solutions to current problems plaguing mill management were found. Only by means of this practical approach could an independent, self-subsidized laboratory hope to survive in the practical business world.

THE INCREASING industrial use of textile materials, the im-



High-speed photograph of yarns being impacted by a missle—part of a research project undertaken by Fabric Research Laboratories for the Naval Bureau of Aeronautics (see TEXTILE INDUSTRIES for September, 1956, pp. 110-113).

petus of military demands, and the growing awareness in the textile industry in general of the need for research forced FRL into almost immediate expansion. As the number of technical personnel increased, and the volume of equipment grew, the one floor of a Boston office building in which the Laboratories were started became inadequate, and the facilities were expanded to occupy all five floors.

Encouraging and profitable returns for clients brought more clients, and the combination of practical research and development and sound contributions to textile-research philosophy enhanced the firm's reputation.

In 1952 the decision was made to move. Expansion had bulged the walls of the old Boylston Street building, and increasing demands created the need for facilities specifically designed for the needs of textile research. The hunt for an appropriate site began, and a spot on the new Route 128, the billion dollar industrial highway, was chosen.

Chauncey C. Chu, a senior research associate on the laboratory staff, with considerable practical experience in building design and intimate association with the needs of textile-research facilities, drew up the original plans. In July of 1955, the ultramodern building was finished, and a staff of forty-five moved into a building with ideal conditions for research and development. And recently, even while some individuals in the textile industry have been crying that the industry is finished, the volume of business at the Laboratories has increased so rapidly that once again expansion is being considered.

It is not much short of phenomenal that in an industry pledged to the traditional, a new organization with new ideas and new theories could be so accepted that in fifteen years it has grown to fifteen times its original size.

THERE seems to be little correlation between the drygoods salesman draping goods over his arm to exhibit its draping qualities and "A Study of the Factors Affecting the Drape of Fabrics—The Development of a Drape Meter," a scientific treatise reporting the work of a research program; nor does "Use of a Reflectance Attachment to Obtain Excitation Spectra" mean much to a business-minded mill executive. Yet, clothed in these scientific terms is the essence of practical application.

The fact that leaders in academic science could at the same time be down-to-earth, practical businessmen concerned for their clients in salability and profits impressed management. Textile executives, less concerned with the ramifications and long-term results of "longhair" research than with specific problems in manufacturing or merchandising, found that a scientific approach could not only be accurate in theory, but could be valuable in actual dollar return.

A development of Fabric Research Laboratories which has completely altered traditional concepts of yarn and fabric structure illustrates clearly the application of the scientific approach to a practical problem. A cord manufacturer was blending two fibers of different strengths into his cord. However, instead of getting a cord strength which equalled the total strengths of the two fibers, his cord was rupturing at a load considerably less than that which could be sustained by the combined strengths of the two fibers in proper construction. The problem was presented to FRL.

The solution was found in an analysis of fiber rupture extensibilities and stress - strain - curve shapes, and, ultimately, in fiber selection. The stronger fiber previously being used in the cord ruptured before the weaker fiber; i.e., the stronger fiber had less "stretch" to rupture. This was the crux of the problem. Hence, it was felt that another fiber with "stretch" more nearly equal to that of the initial fiber would combine with the initial fiber to create a cord exhibiting close to the total strengths of the two fibers.

Cords were constructed of fibers having more nearly equal "stretch" curves, and it was found that these cords exhibited satisfactory

strength approaching that of their combined fiber strengths. Consequently, the cord manufacturer was able to construct a satisfactory cord using weaker fibers with equal stretch before rupture.

But the new principle was much wider in its applications. Utilizing this principle, it became possible to make better textile constructions strengthwise, whether in yarns or fabrics, getting optimum strength in construction by using fibers of similar "stretch" before rupture.

From a scientific approach came a major contribution to scientific knowledge and a better product at lower cost for the consumer—an industrialist using suspension lines or a housewife buying clothesline.

BECAUSE industry has recognized a need for Fabric Research Laboratories' practical scientific approach, the Laboratories have expanded and continue to expand. Services have been enlarged to include more than research and development—quality control, new product development and evaluation, by-product usages, market surveys, licensing procedures, laboratory layout and installation supervision, patent procedures, arbitration matters, technical audits, and general consultation.

More important to the industry is the leadership that has been taken in the development of textiles as an engineering science combined with an everyday practical concern for the problems of production and management.

While knowledge of textiles as engineering materials is far from complete, every day the textile industry is advancing through research guided by this philosophy. Gradually, the industry is awakening to the era of scientific research that is the basis of modern technical achievement.

With research organizations proving to industry that dollars invested in research can mean added profits and decreased costs, mill executives are turning to research not as a palliative for present ills, but as an assurance of a successful future based solidly on scientific advance.

Tape condenser vibration problem solved at Stamina Mills

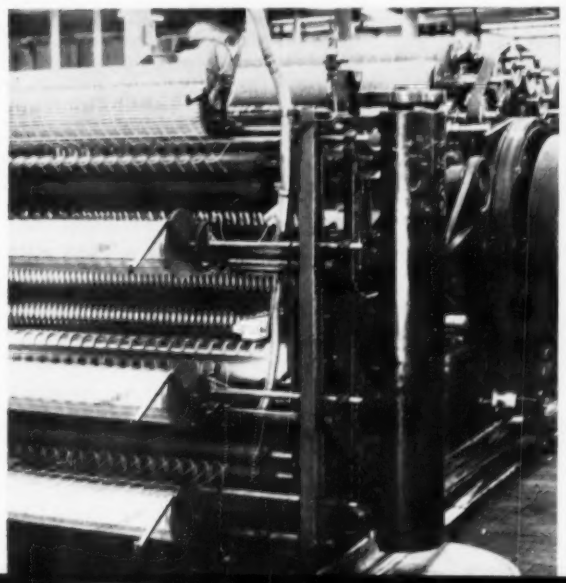
■ UNTIL the four-bank tape condensers on the cards at Stamina Mills, Inc., North Smithfield, R. I., were mounted as shown in the accompanying close-up view of the base, the units "would frequently pull loose from the grouting." This made it necessary to re-install the condensers and lose valuable production time.

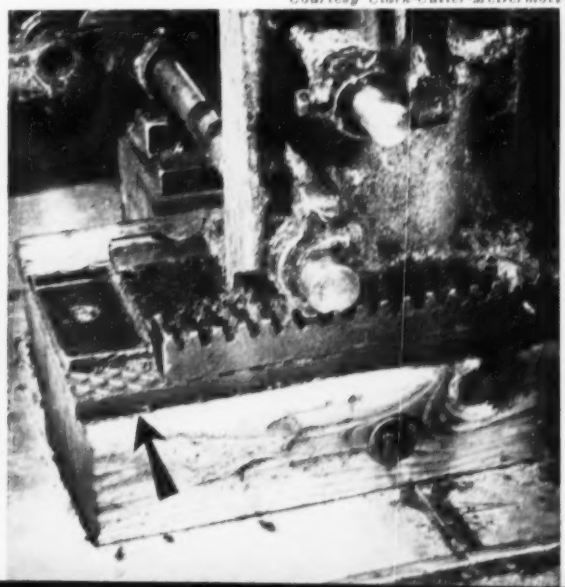
Note in this photo that the rail of the condenser is resting on a waffle-looking mounting pad (arrow) which, in turn, is on a wooden beam. Only the beam is bolted to the floor. Now there is no vibration problem, according to a report from the manufacturer of the machinery-mounting material which is called "Air-Loc."

All of the production machines in this mill are installed on these mounts, the report states. Made of vinyl, sisal, and cork, they resist taking a permanent set so that they can be used again when machines are moved to another location. Machines are simply placed on the mounts and leveled.

Walter Eastman, Stamina's agent, says that use of this machinery installation method has been particularly valuable in conjunction with machinery operated by clutch-brake motors. At one time, vibration from the starting and stopping of the motors loosened machines and made reinstallation necessary. According to Mr. Eastman, this waste has been eliminated because machines installed on Air-Loc stay in place and remain level. In addition, he said, with these mounts it is easy to make mill modernization continuous because moving of spinning frames, for example, is greatly simplified.

How this condenser at Stamina Mills is mounted to prevent its pulling loose is shown in the right photo.
Courtesy Clark Cutler McDermott





Georgia mill men told

How they maintain looms

They also discussed:

Temple thread cutter oiling

Fluorescent light maintenance

Condensate on inside surface of plant walls

Electric motor cleaning and lubricating

Responsibility for maintenance

Staff report

(This is a continuation of the report of the fall meeting of the Textile Operating Executives of Georgia, which appeared in the November issue, pp. 149-151.—The Editors)

Looms. The question concerning loom maintenance was broken into five parts, each of which is reproduced in the discussions following.

(a) Do you have a preventive maintenance schedule for looms? If so, please discuss in detail.

Portions of the several replies lent themselves to tabulation. See Table 1.

Mill N: "All looms are given a careful inspection by a specially trained man approximately every three months. In order to simplify reporting, the loom is divided into 10 motions and each motion is inspected and graded as to its operating conditions—that is, whether it is very good, good, standard, below standard, or poor.

"If a motion receives a grade below standard or poor, it is specified whether that grade is due to bad settings or to worn parts.

"Upon completing the inspection of a loom fixer's job, a report is made in duplicate (by loom number) showing the condition of each motion on the loom. One copy of the report is given to the fixer and the other copy is kept on file in the weaver room office.

"If the number of defective motions on the fixer's job is low, no immediate follow-up is made. If the number of defective motions is excessive, the report is discussed with the fixer. After a period of about three weeks, the job is again inspected to see if the defective motions have been fixed.

"Each loom fixer is required to check thoroughly five looms per week, and these same looms are checked by the third hand.

"Each fixer inspects shuttles and boxes on a given day in the week. Second hands follow up to be sure that this is done."

Mill S: "The preventive maintenance program for looms is performed by the loom fixer. On a formed by the loom fixer. On a daily basis the following work is performed: All looms are checked immediately after shift change for correct shuttle boxing and warp tension. All looms are checked to see that thread cutters are cutting and holding, that forks are operating correctly. Quill cans are checked for big pieces or skinned quills.

"One-third of the shuttles in each section are 'slicked up.' On a weekly coverage basis, each shuttle is sanded, polished, spring and eye tightened, and fur and bristles serviced. On a six-week-coverage basis, one loom a day by each fixer is given a complete preventive maintenance check, including all gauge settings."

(b) What is your method for cleaning looms, and what is your frequency? State type of cloth and cotton fiber characteristics. Are results satisfactory?

Mill K-1 completely cleans looms at warp-out with compressed air, and then lubricates. If the warps run longer than three weeks, the looms are cleaned at each warp-out; if less than three weeks, once each two warp-outs. The drop wires are blown clean each 24 hours. The results are satisfactory. Cloth produced: blended synthetics.

Mill K-2 blows off ends and tops of looms each 24 hours, and cleans entire loom with solvent and compressed air on each warp-out. The harnesses and reed caps are cleaned weekly with a small brush, and loom arches are cleaned with a solvent each two weeks. Cloths produced: wide sheetings (muslins and percales), lightweight sheetings for the bed spread trade, print cloths, and various industrial sheetings.

Mill L cleans looms with a cleaning solution and compressed air on each warp-out, or each two weeks. Cloths produced: chafer material and light ducks (all plied yarns). The results are satisfactory on most codes.

Mill N cleans looms every eight hours with compressed air. Each warp-out the looms are cleaned with a nylon brush. The plant reports the system is not too satisfactory. Cloth produced: Type 4 twills.

Mill O cleans and lubricates looms as the warps run out. The fibers used are cotton of 15/16″ to 1″ staple, SGO grade, and 1 9/16″ rayon and nylon staple. Cloths produced: leno, shirting, suiting, tickings, drapery, fancy upholstery, and automotive fabrics.

Mill U blows off all looms each 24 hours, and cleans them with solvent each 30 days. The latter schedule coincides with warp run-out. The results are reported as satisfactory.

(c) Do you repair loom crank shafts by metallizing? If so, how

TABLE 1

Procedures Used in Checking and Repairing Looms

Mill	Frequency of maintenance checks	Who makes the check?	Who makes follow-up?	Remarks
K-1	At warp out	Fixer	Foreman	A chart is used which shows all parts to be checked. The overseer and assistant superintendent spot check three looms per week.
K-2	One loom daily	Fixer	Foreman on next shift	The foreman may require rechecks by the fixer until the loom is operating to his satisfaction. The overseer also spot checks each loom.
L	One loom weekly	Fixer	Not given	Additionally, looms are overhauled on a yearly basis, and records of maintenance are kept. A check sheet is used.
N	See discussion following this table.			
O	Not given	Not given	Not given	Fixing procedures are standardized. Periodic checks keep the actual loom settings compatible with standard settings.
R	Two looms weekly	Fixer	Supervisor	All checks follow definite and orderly path of assuring performance of maintenance duties.
S	See discussion following this table.			
U	Three looms weekly on each fixer's section	Fixer	Shift o'seers	The overseers check first to determine conditions of looms. Needed repairs are made, based on findings, and a second check is made. When a new shuttle is installed, the loom is given a 100% check.

does cost compare with new shafts?

Only *Mill O* reports repairing crankshafts by metallizing, and this practice saves about $20.00 per 60″ automatic loom.

(d) How much life do you get from temple thread cutters? Do you oil them? If so, what kind of oil do you use?

Of the eleven plants entering the discussion on loom maintenance, only two actually oil the temple thread cutter. Furthermore, the only plant giving figures to reflect temple thread cutter life is *Mill L*, which reports a cutter life of five months on plied yarns (7.50/6 to 22/2).

(e) Do you have trouble keeping shuttles boxed on a 44″ X-2 loom running at 184 ppm? If so what measures have you taken to correct this? What experience have you had with the Page shuttle check?

Mill N runs 44″ X-2 looms at 172 ppm, and has no trouble keeping shuttles boxed. The plant has a few looms running with Page check straps, but lacks the experience necessary to evaluate the checks.

Mill O has some difficulty keeping shuttles boxed on 70″ X-2 looms running 160 ppm. The plant states that a new shuttle check (not identified) shows improved boxing. The balance of the plants either did not answer the question or reported no experience.

Fluorescent Lights. The maintenance of fluorescent lights is carried out differently in all the plants. Table 2 lists the manner in which some of them clean and replace the fixtures and tubes.

Wet Walls. Practically all mills are bothered with condensation on the inside of the plant walls, the following question disclosed.

Have you had trouble with condensate on weave room walls? If so, how did you stop it? In your answer please include the following:

- **(a) Thickness of wall**
- **(b) Do you have glass blocks in windows?**
- **(c) Type of humidification equipment**
- **(d) What is your temperature and relative humidity?**

Twelve of the thirteen mills replying have condensate trouble on the inside of the plant walls. The lone exception is a plant equipped with windows, and which operates in a range of temperature and humidity in keeping with those plants undergoing the "sweating."

In two mills some or all of the windows have been replaced or filled in with glass blocks.

Mill N has installed small troughs at the foot of the walls to carry off the condensate. Despite efforts to keep the troughs clean, they plug with lint and overflow now and then.

Mill P, with 21″ walls lined inside with glazed tile, has condensate trouble occasionally, and has installed a 1″ steam line about one foot off the floor to heat the air near the wall. This eliminates most of the water. The windows are ⅛″ glare-proof glass.

Mill S replaced the windows and brick work between the concrete columns of a saw tooth wall with two walls containing empty space between. Into those voids were placed heaters which are brought into operation in cool weather. The walls of the main mill are thick and do not get wet.

Mill T has little trouble since bricking up windows with a layer of foam glass between an inner and outer brick layer.

The type of humidifying equip-

TABLE 2

Fluorescent Lights
Spinning and Weaving

Mill	Method of cleaning and replacing	Are rapid-start fixtures satisfactory?	What are adequate foot-candles for Grey goods?	What are adequate foot-candles for Colored goods?	Type of fixture	Parallel to or at right angle to frame?	What is your opinion of the slotted reflector type?
F		Yes			Rapid-start two 40-watt tubes	Parallel	Not needed
G	Bad tubes replaced weekly				Open, enamel shade	Right angle	Requires less cleaning
J	Cleaned by each department, replaced as needed by maintenance dept.	Yes	(Foot-candle readings not known)		48" and 96"	Parallel	Not suited for use in plant
N	Cleaned daily and replaced as needed	Experience not adequate for evaluation	50	50	HF-100	Right angle to loom, parallel to spinning	Give good results
O	Replace bad tubes daily, clean constantly	Yes, but experience is limited	(Foot candles run from 15 to 25 in spinning and weaving)		Spinning: two tubes 40 watt, 4' fixtures Weaving: four tubes 40 watt, 8' fixtures	Spinning: parallel Weaving: right angle	
P	Replace bad tubes daily, departments do own cleaning	No experience	(26 foot-candles in weaving are apparently satisfactory)		Weaving: three-lamp 40-watt fixtures	Weaving: parallel and centered over alley	No experience
S		No experience	Spinning: 35 Weaving: 60-75		Use six types	Spinning: parallel and at right angle Weaving: parallel	Will use in future
T		Yes	(No accurate information)		Both continuous row and individually hung fixtures both open and closed end, 4' and 8'	Right angle	No experience
U	Replace bad tubes as needed	Yes	50 foot-candles		Two 40-watt lamp fixtures with both open and closed ends	Right angle	No reply

ment in use seems not to be related to interior "sweating." Temperatures used range from 80 to 90 F; relative humidities, from 75 to 92%.

Motor Cleaning and Lubricating. The cleaning and lubricating frequencies adopted by most of the mills set so many patterns that several are grouped for comparison in Table 3. Some of the plants are using group drives, some have motors with pre-lubricated ball bearings, and some have high temperature situations which must be met. In short, each plant has tailored a schedule to meet its particular needs.

In some instances the plants mention cleaning being done by the various departments without mentioning the frequencies. In other cases the plants mention frequencies without identifying the responsible department. Table 3 leaves blank all doubtful or missing frequencies, and omits some of the plants.

Mill P blows out motors on a weekly schedule, and lubricates them twice yearly. The switches on the spinning frames are blown out every four months. Those are the only switches in which the plant finds lint to be a problem.

Responsibility for Maintenance. Ten plants replied to the question:

Who in your mill takes care of maintenance between overhaul periods?

(a) Do you have a maintenance crew?

(b) Are fixers responsible for this work?

(c) How often do you inspect the following:

1. Pickers?
2. Cards?
3. Drawing?

From Summerville (Ga.) Mfg. Co. came Curtis Meacham, E. C. Bridgeman, Holland Martin, and Earl Woods.

Henry Rider, Edward Owens, MacMillan Myers, and J. J. Jester came from Riegel at Trion.

4. Roving?

5. Spinning?

(d) Do you use maintenance forms to be filled out by the persons inspecting the machinery?

In practically every case the plant's fixers do the maintenance work between overhaulings: with such work as would be too heavy for the lone fixers being done by the overhaulers or other maintenance teams.

The replies to part (c) from four of the plants lend themselves to tabulation. See Table 4.

Six of the ten plants use maintenance forms while inspecting and/or overhauling, and these are filled out by the person(s) making the repairs or inspections.

(Continued next issue)

TABLE 3

Cleaning and/or Lubrication Methods and Frequencies for Motors, Starters, and Switches

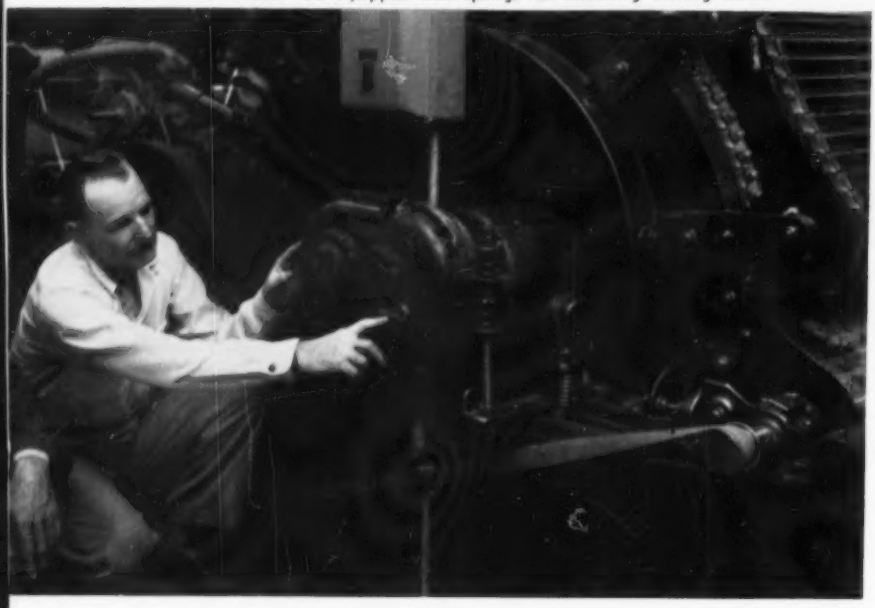
	Cards		Drawing frames		Fly frames		Spinning frames		Switches	Starters Cleaned and/or Serviced
Mill	Cleaned	Lub.	Cleaned	Lub.	Cleaned	Lub.	Cleaned	Lub.		
G	None (line shaft oiled and cleaned every two weeks)	6 mo	None	2½-3 yr	2 weeks	5 yr	Weekly		No special schedule	Yearly clean and/or replace, contacts, change oil
H	(Line shaft motors blown out every two weeks and greased every 6 mo)		Weekly	6 mo	Weekly	6 mo	Weekly	6 mo	6 mo	Cleaned each 6 mo
I	6 mo		6 mo		6 mo		6 mo		6 mo	Cleaned every 6 mo
L	(Motors are cleaned with compressed air. Open types blown out daily; semi-open types twice weekly; totally enclosed, yearly. Motors are repacked with grease every three to four years.)								Yearly	Cleaned each 3 mo
N	4 mo		4 mo		4 mo		4 mo		Yearly	Cleaned yearly
O	Weekly	Yearly	Weekly	Yearly	Weekly	Yearly	Weekly	Yearly	6 mo	Cleaned each 6 mo

TABLE 4

Inspection for Carding and Spinning

Mill	Pickers	Cards	Drawing	Roving	Spinning
H	Two per week	One card per day	Daily	Eight frames weekly	90 days
L	Monthly	Monthly	Monthly	Monthly	Monthly
O	Ten weeks	At grinding	Six weeks	26 weeks	24 weeks
U	Eight weeks	Four weeks	Six weeks	Eight weeks	Six months

Co-author Yawn indicates that drive is attached only to the cylinder shaft and torque arm. At the tip of his right forefinger is the glass window for viewing oil level. The torque arm is the vertical rod equipped with springs for absorbing starting shock.



GEARMOTOR TYPE CARD DRIVE

result of mill man and motor manufacturer cooperation

by R. W. Yawn
Textile engineer
Upson County, Ga.
and
E. C. Fox
Westinghouse Electric Corp.
East Pittsburgh, Pa.

Exclusive

SINCE the beginning of the century the textile industry has recognized the general superiority of individual drives for textile machines, and has moved rapidly indeed to capitalize on their advantages.

Today, in the majority of textile plants, line shafts and flat belting have been superseded for almost every operation except carding. Although valid reasons may once have existed for retaining lineshaft drives in the card room, the development of an entirely new gearmotor drive for cards is expected to bring about replacement of lineshaft drives in their last stronghold.

The designers of the new equipment expect that the new drive will prove capable of increasing production by three to five per cent or more, and will insure a high degree of product uniformity and quality.

Developed by Westinghouse Electric Corp., in cooperation with R. W. Yawn, the new drive, known as a "full-floating" cotton-card gearmotor drive, consists essentially of an enclosed gear unit and a totally enclosed nonventilated motor as an integral assembly

The unit is designed to be keyed onto the card shaft, which supports the entire weight of the gear unit and motor. A double reduction set of helical gears is used to reduce the speed of the motor to the proper operating speed of the card. By using precision gears, wear is minimized and power transmission is accomplished with an efficiency better than 96 per cent. The gears are completely enclosed in a cast-iron housing to prevent the collection of lint.

A torque arm, connecting the gear case to the card frame prevents the unit from turning with the card shaft. A small amount of spring action is provided in the torque arm to prevent heavy shock loads on the gears and the card when the card is started.

To drive the card, a totally enclosed nonventilated 1½ hp squirrel-cage motor is connected directly to the gear case. This motor has been designed to have the proper characteristics to enable it to start the heavy card cylinder. By using a totally enclosed nonventilated motor, the possibility of lint clogging the motor is eliminated.

The combination linestarter — provided for the gearmotor drive is designed especially for card applications, and has already been used extensively on drives of this type. It contains a circuit breaker and reversing switch (to facilitate grinding of the card) and is housed in a NEMA XII enclosure so as to be virtually lint-tight.

The reversing switch handle protrudes through the side of the enclosure and is gasketed to prevent lint entering the enclosure at that point. Since the reversing switch is not a load-break unit, placing the switch to the side eliminates the danger that the card grinder might accidentally operate the switch handle.

Also, an electrician will not be necessary during grinding operations, since it is not necessary for the operator to open the enclosure to gain access to the reversing switch.

Actual applications already in use confirm that installation of the new gearmotor card drive is simple and requires little time. After the tight and loose pulleys are removed from the card shaft, the floating gearmotor is slipped over the card shaft and keyed in place.

The torque arm is then connected from the gear case to the card frame. When in place, the card gearmotor requires no more space than the tight and loose pulleys. Thus no relocation of the card is normally required.

The motor starter may be mounted directly on the card frame, and since it is a combination type, a row of cards may be fed from a single feeder. As the cards would normally be started by the operator in a direction parallel to the aisle, no difficulty is encountered by using this wiring method in starting the high-inertia cards — no two cards on the same feeder are being started at the same time.

Even though the new drive requires little maintenance, the gears may be inspected or replaced without moving the unit from the card, and the card motor can be replaced in 30 minutes or less should shop maintenance be desired.

In designing the drive, particular emphasis was placed on lubrication — to minimize the necessity for it and to simplify lubrication procedures. The gears and bearings are lubricated from a reservoir of oil maintained in the gear case.

On the side of the gear case, a small glass window permits the oil level to be seen. A drain and oil-filling plug are also provided to allow the oil to be changed without removing the unit from the card. The back bearing of the motor is lubricated by oil from the gear case. The front bearing is a sealed ball bearing which requires no lubrication.

The gearmotor drive may be considered an innovation of very real interest to the cotton textile industry, since the use of lineshafts and flat belting for driving cards can cause significant operating difficulties.

This lag in modernizing card rooms may be attributed, in part at least, to the fact that the high inertia and low power consumption (about 1.2 hp) characteristic of cards has made it difficult to design and produce a small motor with the proper starting characteristics. On the other hand, cards have been relatively easy to start when driven by flat belting from a lineshaft.

Also contributing to the industry's adherence to lineshaft drives is the fact that for many years carding equipment has not changed in basic design. Thus it has not often been necessary to relocate machinery in the card room.

Many attempts have been made to design individual card drives, but none has been universally acceptable to the textile industry because of the continued high maintenance each of the other types has required. On this point, the new floating gearmotor drive is proving itself in the field.

Units installed in one southern plant have been operating for nearly three years, on a life-test basis. No maintenance whatsoever has been rendered these units during that time. They are still operating in their original oil bath. Present operation would indicate that they will continue to operate indefinitely.

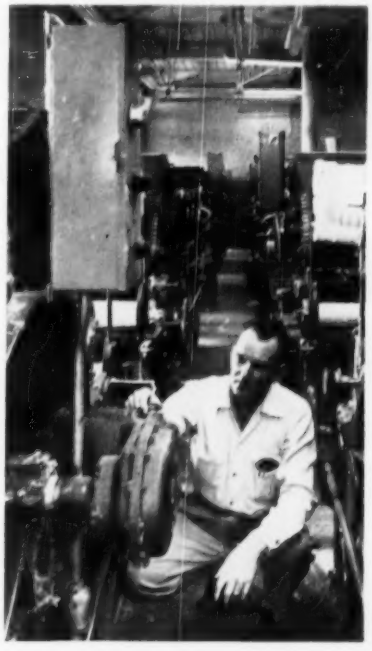
Among the operating conditions that can benefit from the replacement of lineshaft drives by gearmotor drives are these:

1. Lineshaft maintenance—both repair and realignment—is eliminated. The misalignments on lineshafts are primarily caused by changes in loading on the floor above or by uneven belt tension. If the misalignment is not immediately corrected, lineshaft bearings will fail, and a costly outage is likely, as well as the replacement of bearings or, possibly, shafting.

2. The necessity for long flat belts which require costly replacement, belt dressing, and belt shortening is eliminated. In most plants the replacement of leather belting

The gears, bearings, and their internal relationship are shown in this disassembled view.

The card alleys need not be changed in order to make room for the gearmotors.



and its repair constitute the major cost of a lineshaft drive.

3. Downtime can be virtually eliminated by the use of individual gearmotor drives. With a lineshaft drive the failure of any of the lineshaft's couplings, belts, drive motor, or motor starter, closes down many cards for a considerable length of time.

4. In recent years textile industry engineers have found that good lighting improves the efficiency of each productive department. This in turn has prompted the removal of belting and overhung lineshafting from almost all production areas except the card room.

5. In many cases, flat belting becomes slack and slips on the drive pulleys. This decrease of speed lowers production and decreases quality.

6. Oil dripping from overhead motors and lineshaft bearings causes spoilage. This hazard to quality is further aggravated by belt dressing which is thrown from the overhead belts. The cotton-card gearmotor eliminates this possibility. The gear case is tightly sealed against oil leakage and the outer motor bearing is prelubricated.

7. Air turbulence caused by lineshafts and belts is eliminated when the gearmotor drive is installed. Since lint gathers in all points of the card room, the top of the card now becomes the topmost equipment to be cleaned. Because of its construction, the gearmotor unit can easily be cleaned without hazard to the equipment.

8. The safety hazard of open belting is eliminated. There are no exposed moving parts to the floating gearmotor which can cause injury to personnel under normal operation.

9. With the cost of labor increasing in textile plants, many operators are rearranging equipment to provide the most efficient flow of material. Lineshaft-driven cards are expensive to move, while gearmotor-driven cards may be easily rearranged to suit the operating requirement.

10. Long flat belts create considerable static electricity, which by its nature is detrimental to production and may constitute a fire hazard.

Improved method for vigoureux printing of wool

■ AN IMPROVED technique for vigoureux printing of wool, which will substantially decrease the time needed for dye fixation and increase depth of color achievable, has been perfected by the Commonwealth Scientific and Industrial Research Organization of Australia, Dr. Gerald Laxer, director of the Wool Bureau's department of science and technology, announced recently.

The improved method involves no change in the sequence of events and no changes in the machinery used for normal vigoureux printing, Dr. Laxer said. Benzyl alcohol or other suitable solvent is added to the dye paste at the rate of one half to one gallon of benzyl alcohol to 10 gallons of paste.

This replaces certain unnecessary constituents used in conventional formulas, and no additional costs should therefore be involved, Dr. Laxer stated. By using a suitable solvent and increasing the pressure of saturated steam, it is possible to fix the dye in 5 to 20 minutes, depending on the steam pressure and type of dye used.

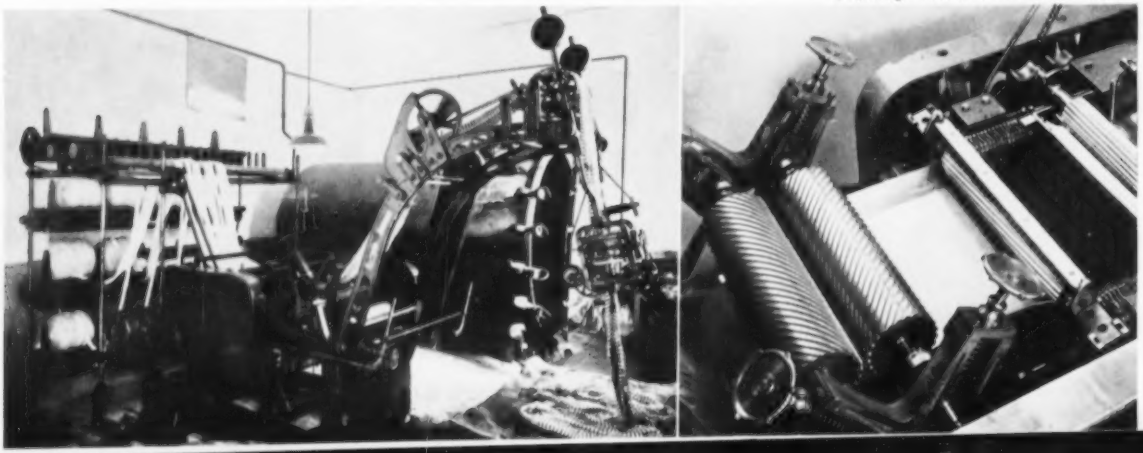
Any dye which is more soluble in benzyl alcohol, or in any other solvent used, than in water can be applied with advantage by this method, providing the fastness properties of the dye are satisfactory. Dr. Laxer pointed out that, in general, the properties which confer high wash fastness on a dye also make it soluble in benzyl alcohol.

Premetalized dyes are particularly suitable and are recommended in preference to chrome dyes. However, the somewhat alcohol-insoluble chrome dyes can be used if a leveling agent is added to the paste. Many acid dyes are also suitable.

Saturated steam at high pressure fixes the dye quickly, and acetic acid in the formulas prevents alkali damage. Steaming, under suitable conditions, will give 90-95% dye fixation. It is not economical to fix more than 95% of the dye.

For light shades, steam pressure below 5 psi should be employed when using premetalized or acid dyes. Saturated steam at a pressure of 10-15 psi should be used for darker colors.

Over-all view of a wool top printing machine and close-up (right) of the faller section.
Courtesy Ernest L. Frankl Associates



Leon Segal, Southern Regional Research Laboratory, answers question during first session.

CHEMISTS DISCUSS COTTON FINISHING TRENDS

Members of the panel who discussed performance standards for wash-and-wear cottons, l-r: Charles E. Grandey, Federal Trade Commission; Paul E. DiBianco, Cluett, Peabody & Co., Inc.; Charles W. Murphy, Cluett, Peabody & Co., Inc.; George T. Wham, Good Housekeeping Institute; B. L. Lizak, Montgomery Ward & Co., and Harley Y. Jennings, Dan River Mills.

Staff report

TEXTILE technologists and chemists from the textile and chemical industries gathered at Washington's Hotel Statler on October 2-3 to hear reports on the latest developments in the chemical finishing of cotton.

Speakers on the program of the Sixth Chemical Finishing Conference, sponsored by the National Cotton Council, discussed topics ranging from oil and water repellent treatment of cotton fabrics to a new family of chemicals for the improvement of wash-and-wear characteristics of cotton garments.

Leon Segal of the Southern Regional Research Laboratory described experiments in the application of fluorochemical compounds to impart oil and water repellency to cotton fabrics of varying constructions. Fabric treatment consisted of immersion in the respective treating baths, followed by squeezing and curing. Treating chemicals included a chromium complex of perfluoro-octanoic acid, several acrylic polymeric emulsions, and aqueous aluminium acetate solutions.

It was found that wetting times for fabrics containing Hycar latex at 5, 10, and 20% add-on, after-treated with 0.1% chrome complex solution, were greatly lengthened over those where only the complex was used. Results also showed that fabric construction had a marked influence on the effectiveness of the treatment with latices and chromium complexes—sateen and whipcord fabrics required heavier applications of fluorochemicals to obtain repellency comparable to lighter constructions.

Treatments in which perfluoro-octanoic acid was applied to mordanted fabrics resulted in oil repellency; however, the wetting times showed a dependence on fabric construction and concentration of mordant as well as the acid.

Richard Steele of Rohm & Haas Co., in discussing the factors affecting the drying of cotton apparel fabrics, reported that the most important fabric property determining the drying time is the total amount of water it holds when wet, which is made up of three parts: that held inside the fibers, that in noncontinuous capillaries, and that in continuous capillaries.

He demonstrated with slides and discussed the extent to which the water-holding capacity can be modified by water-repellency, cross-linking, and surface resin deposition.

J. David Reid of the Southern Regional Research Laboratory reported on work in progress to increase the utilization of cotton by development of improved resin-treated wash-and-wear cotton garments.

He discussed work carried out to perfect a finish aimed particularly at men's "no-muss" summer fabrics, a market that reaches 180 million square yards, of which cotton holds only about 11%. Both fundamental and practical studies have been conducted on a "recuring" process, in which cotton goods already resin-treated and cured are made into garments and after-cured by careful introduction of catalyst. The creases, pleats, etc., are then set by heat curing.

Although the creases so pro-

A. R. Urquhart, Shirley Institute (England), pours a glass of water for conference chairman J. Marshall Cole, Cold Spring Bleachery.

Speakers on the second day were, l-r, James B. Irvine, Quaker Chemical Products Corp.; Georg Heberlein, Heberlein Co.; Melvin D. Hurwitz, Rohm & Haas Co.; and Thomas D. Hawley, United Merchants Laboratories, afternoon session chairman.

duced are not as durable to laundering as those which can be set in the fabric on an initial cure, they compare favorably with those found in worsted/wool garments.

Mr. Reid emphasized that more work is needed on the process before it will become commercially available.

Highlight of the second day's program was a panel discussion on performance standards for wash-and-wear fabrics, with representatives of various segments of the textile and apparel industry making up the panel.

Moderator J. Marshall Cole, vice-president of Cold Springs Bleachery, in opening the discussion said that many questions had been raised at the consumer level with respect to performance of wash-and-wear fabrics and indicated that the industry has a responsibility to examine this problem.

B. L. Lizak, Montgomery Ward & Co., stated that wash-and-wear features appeal to the housewife because household chores are reduced. However, at least touch-up ironing of garments is required after washing and drying. With the introduction of automatic washers, he said, the housewife expects that the material will withstand the most extreme laundering conditions.

He listed the following essential properties of a wash-and-wear fabric: appearance, color retention, shrinkage, resistance to abrasion, ease of needle penetration, tear strength, and the fabric's use with other trims—buttons and the like.

There are very few consumer complaints for appearance of the garment, he said. The majority of complaints are based on abrasion, needle cutting, dye rubbing off, and some cases of low tear strength. He believed that there was a need for a coordination of efforts throughout the industry to resolve the problem of standards and definitions in the wash-and-wear field.

Charles W. Murphy, merchandise manager, Cluett, Peabody & Co., Inc., also pointed to the lack of standards in the wash-and-wear field and urged that promotion of new fabrics be done sincerely. He said that in the men's shirting field, the cotton shirt, which has gained consumer acceptance, serves as a basis for comparison with anything new.

Paul E. DiBianco, assistant manager of converting and quality control, Cluett, Peabody & Co., Inc., stated that present wash-and-wear fabrics have not been engineered for machine washing, and indicated that under conditions of practical laundering, employing higher temperatures, etc., some resin removal must come about.

Some of the problems of wash-and-wear fabrics that he cited are discoloration, apparent in some finishes, and light-fastness. He said that although immediate results of the 40-hour exposure test are good, he suggested that the tested fabric sample be re-examined several days after exposure, for many peculiarities can be encountered. As to fabric strength, Mr. DiBianco said that wash-and-wear fabrics require compensations in fabric construction to offset strength loss.

Turning to crease resistance, he stated that there was no means at present to give a performance level that can be used for guidance. Current methods of measuring crease resistance are not accurate for correlation with visual examination, he said, in a concluding portion of his talk.

Harley Y. Jennings, director of research, Dan River Mills, discussed the wash-and-wear field from finisher and consumer standpoints. He said that while the treating chemicals available on the market can impart satisfactory appearance and crease resistance properties, a more balanced relation between the other properties must be achieved as these are also of concern to the consumer.

In touching on the economics of resin-treatment, he said that the price of treating chemicals ranges from 17¢/lb to over $1.00/lb, and in order to meet specific competition the finisher must use materials accordingly. The consumer, on the other hand, has such a wide selection of finishes that he is at a loss as to what to purchase.

In a concluding statement, Dr. Jennings declared that a balance between functional properties and appearance was essential in a wash-and-wear fabric.

Charles E. Grandey, representing the Federal Trade Commission, discussed areas in which the FTC can cooperate with retailers and the industry. He stated that consumers are becoming more demanding and want to be enlightened as to a product's limitations

as well as its merits, and that American business is beginning to realize this factor. He also urged the need for standards of testing to determine if individual fabrics conform to established requirements.

George S. Wham, Jr., chairman of AATCC's wash-and-wear committee and technical director of Good Housekeeping Institute, gave a progress report on the committee's efforts to develop a reproducible test method for measuring the appearance or freedom from wrinkles of textile fabrics after washing and drying.

The proposed test method that is now being evaluated on a large scale by mills and chemical manufacturers, he said, should be fully developed by the year's end. Briefly, the test consists in subjecting fabric samples to five consecutive washings in a home automatic washer under practical laundering conditions, including suds, spray, rinse, and spin drying. Drying can be either line drying or in tumble-type machine. The fabric sample is then evaluated by comparison with photographic standards developed by the Monsanto Chemical Co. with a specific procedure being followed for obtaining values.

In the second portion of his talk, Dr. Wham cited some results of surveys carried out among housewives in the U. S. with respect to wash-and-wear fabrics. He stated that 88% of the women indicated that fabrics needed "touch-up" ironing and that blended fabrics required less ironing.

There were 41,000,000 homes, he said, with some type of washing machine—and sales of automatic and semiautomatic type machines are exceeding others. He reported that 13% of homes have dryers and that washer-dryers are receiving increasing acceptance. Housewives, he declared, want laundering procedures that are easy to follow, and to meet the wide range of laundering techniques to which garments are subjected we must have performance to spare.

Dr. Wham also advocated the establishment of test methods and better communications with consumers; and urged that a closer liaison be maintained with appliance manufacturers who play an important role.

Following the talks by members of the panel there was a question and answer period. In closing the panel discussion, Moderator J. Marshall Cole said that in view of the wide-spread cooperation shown by the industry with the AATCC wash-and-wear committee, manufacturers are interested in wash-and-wear standards.

J. B. Irvine of Quaker Chemical Products Corp. reported on a new family of chemicals—acetal cellulose reactants — which impart crease resistance to fabrics but are nonchlorine-retentive. The acetals, which are prepared derivatives of aldehydes, can be made from two moles of an alcohol and a mole of aldehyde in the presence of an acid or metal halide catalyst.

The new family of chemicals consists of two groups: the unmodified and modified glycol acetals; and materials capable of forming cross links and polyacetal polymers within the fiber, of which group pentaerythritol acetal is a typical product.

The properties of cotton fabrics treated with acetal reactants were compared with those treated with various resins in current usage. Because the acetal reactants do not contain nitrogen in the molecule there can be no chlorine-retention. The range of crease resistance obtainable runs from low to high in the order, glycol acetal, modified glycol acetal, urea formaldehyde, dimethylol ethylene urea, and pentaerythritol acetal.

As to tensile loss, the modified glycol acetal, which imparts medium crease resistance, gives almost no tensile loss. The acetal reactants are resistant to hydrolysis, can produce a variety of hand effects and, in the case of the glycol acetals, possess high abrasion resistance.

Odors of the materials range from none to very strong: glycol acetal, none; modified glycol acetal, mild; and pentaerythritol acetal, strong. The latter can be removed from fabric by curing and afterwashing. Treatment with the glycol acetal reactants makes little increase or no change in the absorptive capacity of a fabric, and there is no yellowing effect on cotton fabrics.

Products of the glycol acetal reactant group are available commercially and have been evaluated in the mill. Although the acetals of the pentaerythritol type have been developed for the treatment of white cotton fabrics, there is insufficient mill process information to determine their eventual position in finishing.

Editor's Note: All of the papers presented at the conference will be printed in full in early issues of the Textile Research Journal.

Cotton used exceeded output in 1957 season

■ IN ITS annual review of the world cotton situation, "Textile Organon," the statistical bulletin of the Textile Economics Bureau, Inc., brings out the following:

Production—Output of raw cotton throughout the crop year which ended in July 1957, totaled 36,700,000 bales, a decline of 1,200,000 bales or 3 per cent under the record set the previous season.

Supply—Augmented by the high carryover of 23,500,000 bales from the 1956 season, total world supply is estimated at 60,200,000 bales, up 300,000 bales over the previous season.

Consumption—World consumption of cotton during the 1957 season is estimated at 37,400,000 bales, up 3½ per cent over 1956. It was the first season since 1951 that consumption exceeded output. The result was a decline of 1,000,000 bales in cotton carried forward to the 1958 season.

International Trade—The major producing countries exported a total of 14,600,000 bales, a sharp increase over 1956. This large movement was brought about entirely by U. S. raw cotton exports which rose from 2,200,000 bales in 1956 to 7,600,000 bales in 1957 season.

Six-point cotton program proposed

by North Carolina textile manufacturers at annual meeting

Staff report

MORE EMPHASIS on textile education, solving the problem of narrow profit margins in textiles by reducing costs and expanding markets, improving machinery depreciation rates on tax schedules, and stabilizing cotton prices were urged by J. C. Roberts, outgoing president of the North Carolina Textile Manufacturers Association, in his address at the 51st annual meeting of the association at Pinehurst, N. C. Mr. Roberts, retiring president of the association, is president of Textiles, Inc., Gastonia, N. C.

Expressing long range optimism and confidence which has made itself felt in the textile industry during the past year, Mr. Roberts indicated that, although some unsolved problems remain with the industry, eventually these problems would be resolved to the industry's benefit.

He reviewed the textile import situation which revealed that Japanese exports are running nearly parallel with quotas. Also on the national level of interest is the effort now under way to place raw cotton on a free world market, thus making it competitive, he continued.

Fundamentals of the cotton policy supported by the association call for: (1) An immediate and significant increase in cotton acreage above the 17½ million acres that were allotted this year, and which likely will be allotted in 1958 under present law; (2) A clear-cut procedure for improving the net income position of the cotton farmer; (3) A one-price system, with the price realistically geared to competitive factors, including foreign-grown cottons and other important competing materials; (4) The objective of encouraging cotton to move through normal trade channels, rather than through government hands; (5) A sizable reduction in the enormous cost of the present program and a clear objective for further reductions in the years ahead; (6) The exclusion of any form of processing tax on the manufactured product.

Also supported by members of the association is proposed legislation seeking a change in the depreciation rate of textile machinery from the present 25 years to 15 years, and proposed legislation that would tighten existing laws on anti-dumping and make anti-dumping machinery more effective.

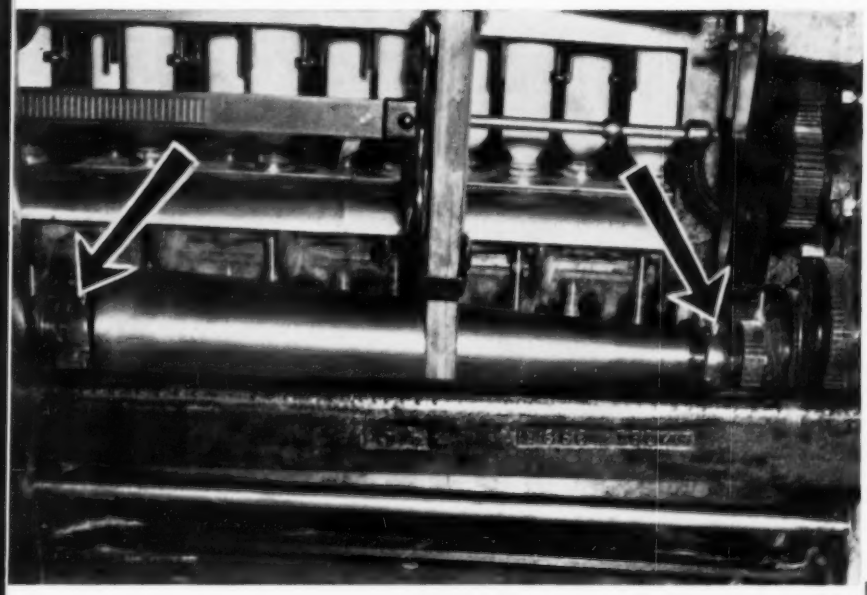
Leonard Smith, director of the utilization research division, National Cotton Council, spoke with emphasis on how research can be used to sell more textiles. He indicated that market research is essential to determine price, quality, and promotion patterns and requirements. New chemical finishes are coming to the forefront, and mills need the benefits of research organizations, he said.

Cotton consumption can be increased by: (1) Increasing the textile market; (2) Increasing cotton's share of the market. The fibers must compete on the basis of price, quality, and promotion, Dr. Smith concluded.

New officers for the association are: Halbert M. Jones, Waverly Mills, Inc., Laurinburg, N. C., president; W. C. Cannon, Cannon Mills, Kannapolis, N. C., first vice-president; J. C. Cowan, Jr., Burlington Industries, Greensboro, N. C., second vice-president.

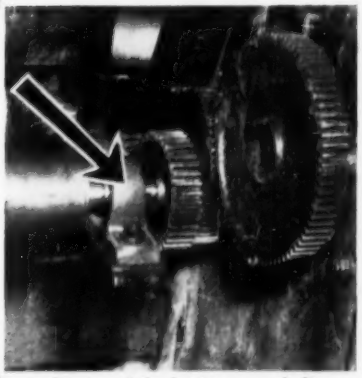
New directors elected include: W. J. Carter, J. P. Stevens & Co., Inc., Greensboro, N. C.; M. Y. Cooper, Harriet and Henderson Cotton Mills, Henderson, N. C.; D. R. LaFar, LaFar Chain of Mills, Gastonia, N. C.; Hal W. Little, Jr., Little Cotton Mills, Wadesboro, N. C.; Ben R. Rudisill, Carlton Yarn Mills, Cherryville, N. C., and H. W. Whitcomb, Fieldcrest Mills, Spray.

Retiring president J. C. Roberts (center), Textiles, Inc., passes gavel to the new president of the North Carolina Textile Manufacturers Association, Halbert M. Jones of Waverly Mills. Looking on are (l-r): William C. Cannon, Cannon Mills, first vice-president; J. C. Cowan, Jr., Burlington Industries, second vice-president; and Hunter Marshall, executive secretary-treasurer.



Ball bearings installed on fly frames at points of critical wear

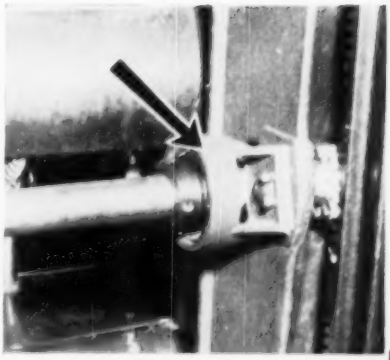
The ball bearings on the bottom cone shafts have given years of trouble-free service. The sleeve bushings formerly used wore out in a short time.



What two North Carolina mills did to

boost roving quality and lower costs

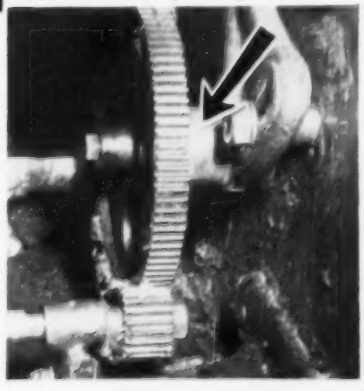
Staff prepared Exclusive



A close-up of the bottom cone shaft bearing which is lubricated for life. This is a trial bearing under test.

In the 14 months they have been in use, the bearings on the lift shaft have paid for themselves.

Better roving quality is experienced since the ball bearings have taken part in eliminating carriage backlash.



ROVING frames converted from plain bearings to anti-friction ball bearings have produced worthwhile improvements in operation at Erlanger Mills, Lexington, N. C., and at Leward Cotton Mill, Worthville, N. C.

The 10″ x 5″ Whitin Interdraft roving frames are equipped with Fafnir ball bearings on the bottom cone shaft at Erlanger. These bearings are lubricated once every six months and have been in service for several years without any trouble or maintenance.

Bearing failure on the bottom cone shaft may ruin the lay gear and cause uneven lay on the bobbin. Uneven lay means uneven drafting of roving, which makes thick and thin places with attendant poor quality work in all subsequent processes. Cone alignment must be maintained correctly by the bearings on each end of the cone shaft.

Plain bearing failure requires 90 minutes of shop time to rebush, and another 45-60 minutes to install on the frame. Plain bearing failure usually scores the cone shaft which must be metallized and overhauled to make it service-

able. Plain bushings require oiling once every eight hours, and if they are not oiled frequently, a definite fire hazard exists, according to a mill spokesman. Frequency of replacement of plain bushings is about two a year on all frames (15) equipped with plain bearings on the bottom cone shaft.

No oil drip has been observed since the ball bearings were put on the bottom cone shaft. LAK 15/16" diameter pillow blocks fitted with Fafnir G1100 KLLB Mechani-Seal bearings are used on these frames. About 15-30 minutes installation time was required for these anti-friction units. New Plya-Seal bearing installation on trial is sealed for life, requiring no lubrication.

Leward Cotton Mill at Worthville, N. C., has six 11" x 5½" Whitin roving frames equipped with ball bearings on lift shafts where solid sleeve bushings were used formerly. These new bearings have been in use more than 14 months, and no failures have been experienced. These units have paid for themselves with less downtime and less tangled stock and waste, according to James McCutchen, plant superintendent.

The bearing replacement program was started to make maintenance easier but experience showed that a notable improvement in quality was also effected. There are 12 bearings on each shaft; and bearing failures were eliminated.

Reworkable waste from this source was cut in half by putting ball bearings on the frames. All sleeve bushings had to be replaced every 12 months to two years. The new units are sealed for life, with no further lubrication required, and have been free of all maintenance so far.

Formerly, the lift shaft (which raises and lowers the carriage in building the bobbin) was difficult to align and bearings would bind, thereby causing an uneven motion which in turn made bad roving.

The shaft is approximately 35 feet long, a factor contributing to the difficulty of alignment. Also, vibration and uneven movement made a poor package and a considerable amount of waste.

The carriage must move at a uniform rate for best results, and anti-friction bearings help assure uniform movement.

Before the ball bearings were installed, the lifter shaft sleeve bushings wore rapidly, and wear factors made grooves in the shaft. This condition prevented the gears from making good contact and often made a whole frame of tangled work. When the shaft is scored, oil won't stay in the bearings, and the shaft must be repaired at extra expense when new bearings are installed, according to Mr. McCutchen.

There has been no oiling problem to worry about since the ball bearing units were installed. The maintenance problem was simplified and quality of work was improved by putting the ball bearing units on lifter racks and gear assemblies also. The combination in this instance gets rid of all backlash in parts affecting movement of the carriage.

Precision Gear and Machine Co. furnished the units fitted with Fafnir Plya-Seal ball bearings which are sealed for life and require no further lubrication. These units were simple to install and are bolted to the frame in place of the regular sleeve bushing and housing.

New bleaching method for "Orlon" improves whiteness

■ A NEW bleaching method for the recently developed whiter, more dyeable "Orlon" acrylic fiber has been announced by Du Pont's Textile Fibers Department. The new process, described in Technical Bulletin OR-83, eliminates the need for fuming or corrosive chemicals and permits scouring and bleaching of most materials in one bath.

The degree of whiteness obtained equals or excels current standards for whiteness of "Orlon" in the knitwear industry, the announcement stated.

Bleaching is accomplished by treating the fabric or garments of "Orlon" at the boil in a bath containing formic acid and a detergent. This is the most effective single feature of the method. Since no fuming or corrosive chemicals are used, the new bleach is harmless to wool or rubber—a significant advantage in half-hose production.

Additional whitening is accomplished by application of a fluorescent white dye and a minute amount of a blue dye in the same bath. The hue or tone of the white can be varied by altering the amount of the blue dye and the amount and kind of the white dye.

"Latyl" Blue RL dye was selected for the process because of its desirable shade, good fastness, and low degree of affinity for "Orlon." The low affinity permits level application at very low concentrations. Two fluorescent white dyes—"Tinopal" ANA and "Uvitex" U—have been found to whiten "Orlon" effectively and to have comparatively good light fastness. Undoubtedly, other white dyes can be found or developed for this application.

A typical formula for 100 per cent "Orlon," with all percentages based on the weight of the fiber and a liquor-to-goods ratio of 30 to 40 to one, would be:

1. Set the bath at 100 degrees F with: 3.0 per cent formic acid (90 per cent), 2.0 per cent "Duponol" RA surface active agent, 0.002 per cent "Latyl" Blue RL, 0.5 per cent "Tinopal" ANA, 10.0 per cent Glauber's salt.

2. Raise the temperature to the boil and boil for one and one-quarter hours.

3. Cool down slowly, rinse clear, and finish as desired.

This treatment can be applied directly to grey goods that are free from heavy soil or grease. Heavily soiled goods should be scoured first.

Familiar to generations of Chatooga Countians, the skyline of Summerville Mfg. Co. has increased threefold since 1907.

Born weaving duck—Summerville's 50th year

Staff prepared
Exclusive

THE plant became a reality when in September, 1907, the sales office of Curran and Barry sold the first yard of duck produced in the new 100-loom (hand change) weave room. The original sales agency was then a part of A. D. Juilliard & Co., Inc., but later the sales agency dissolved relationship with Juilliard and (still later) became known as Morton Curran & Co., Inc. That firm now owns the plant and still sells the entire output.

From its modest beginning the plant has grown to its present 300-loom size. Supporting equipment has grown accordingly.

Judging from the plant's business records, payroll sheets, newspaper clippings, and notes of the late A. J. Ellenburg, who joined the plant in its infancy, the first years of the new firm were not far different from those of any other new cotton mill.

Mr. Ellenburg was promoted to overseer of spinning in 1911, a position he held until his retirement in 1944. During his retirement years he compiled a series of historical notes of the type any "old timer" might set down during periods of nostalgia. Obviously after regulating his life to the sound of a plant whistle for the greater part of a half century, he couldn't resist looking backward now and then.

From his notes it is learned that the plant began operations in late 1907, under the direction of John D. Taylor, president; Ed Sturdivant, vice-president; E. N. Martin, secretary; and E. Montgomery, superintendent.

The depression years exacted their toll. As a result Mr. Ellenburg noted that the plant closed in bankruptcy on August 16, 1938. The plant ownership and name changed. Now as Summerville Mfg. Co., the firm had a new president; J. M. Curran was made treasurer; and F. S. Pittman was made superintendent.

In 1943 the present superintendent, Willis James, appeared on the scene as production manager. Upon his arrival he found that Mr. El-

THE SUMMERVILLE NEWS THURSDAY, MARCH 8, 1906.

COTTON MILL ASSURED

More than $40,000 of Stock Already Subscribed

A very enthusiastic meeting of the citizens of the county was held on Tuesday morning to discuss the proposed cotton factory at Summerville.

Mr. W. H. Penn was made chairman of the meeting and Mr. J. T. Jolly secretary.

Mr. Jno. D. Taylor outlined the plan or proposition for the building of the mill. which, briefly, is that Mr. W. W. Brooks and Mr. H. P. Meikleham, manager of the Lindale mills, will subscribe $20,000 of stock in a $100,000 mill. They further say if we succeed in meeting this offer with the remaining $80,000 they will endeavor to raise the capital stock up to $200,000. These are parties whoare familiar withevery detail of the cotton mill business. Mr. Brooks being an experienced man in the matter of financing, and Mr. Meikleham in the actual operation of the mill. They are men of the highest ability and also honesty and integrity. They also offer to secure the services of Mr. R. L. Wilson as superintendent of the mill, who will come on the ground at once as soon as the stock is subscribed and superintend the erection of the building. Mr. Wilson has managed the Floyd Cotton Mills at Rome with great success, making last year the phenomenal profit of over $40,000 on a capital stock of only $100,000.

After explaining the proposition and stirring talks by Judge Bellah and Capt. Cleghorn, subscription books were opened and something like $20,000 was at once subscribed. This is an opportunity for the people of our county to get a large enterprise started in the county. This mill will be followed by others and in a short time our county will be dotted with mills. It offers gilt-edged investment, the management being such as to absolutely insure the success of the factory.

From the great interest that the people of all sections of the county have manifested in the enterprise and from the amount of stock already taken the building of the mill is assured.

The following gentlemen will receive subscriptions for stock in the factory: J. D. Taylor, J. M. Bellah. A. S. Hinton, Jno. S. Cleghorn, R. Y. Rudicil, J. V. Wheeler, C. P. Neal, J. H. Thomas, R. A. McWhorter, T. M. Ballenger, J. G. Hunt, N. K. Bitting, G. A. Kling.

It is real funny to note how

lenburg was regulating the entire plant's output from his position as overseer of spinning. From the spinning room office came all the production schedules for the plant from opening through the cloth room.

In 1944 the present manager, Albert Dunson, was hired in that capacity. Mr. Pittman had resigned as superintendent, and Mr. James moved into that position. The present team of Curran, Dunson, and James went to work to build a textile plant which would hold its own in a very tight market.

The firm basically still produces industrial fabrics (flat ducks for the tent, tarpaulin, awning, shoe, and bookbinding trades; rug backing for the tufted carpet industry; and osnaburgs for both the bookbinding and bag industries). And into the economy of that sector of Chattooga County pours more than a million dollars in annual payroll.

(The remainder of the story, involving plant operations, will appear in an early issue of this magazine.—The Editors.)

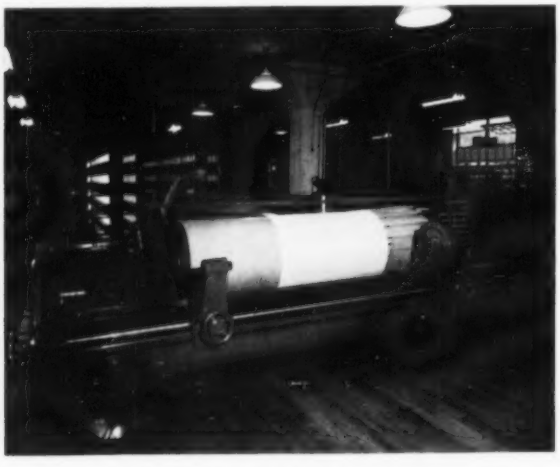
Not much is known of these two undated photographs except that they were made in the early days of the original Summerville Cotton Mills, and that the man wearing the bow tie and sitting in the center of the second row of the bottom photograph is the first superintendent of the firm, E. Montgomery. Even the season of the year is hard to fix. Some of the people are wearing heavy coats while others seem dressed for balmy weather. Note also that several of the boys in the front row are posing barefoot. Suggestive of the horseplay which must have plagued supervisors, are the boys brandishing bottles and roving bobbins.

Silk-system warper at N.C. State has built-in mechanical computer

■ MANAGEMENT and operating executives of fancy goods mills have shown considerable interest in a Swiss-made, silk-system, high-speed, precision warper which was recently installed at the North Carolina State College School of Textiles, William A. Newell, research coordinator, reports.

Typical of Swiss machines, this one is made like a watch, Mr. Newell says. Manufactured by Benninger of Uzwill, Switzerland, it features a built-in mechanical computer which, when data on yarn count, ends per inch, etc., are fed into it, "feeds out dial readings giving operating data on speed, cone height, tension, etc."

The small-diameter drum onto which the yarn is wound may be transported, on built-in wheels, to the slasher for direct slashing. The machine will also rebeam.



Large packages

were discussed by the TQCA at Charlotte

Chairman of the first technical session was Horace Pennington, Cone Mills Corporation.

In attendance from Georgia and Tennessee were, l-r: Dexie Mills, Fulton Bag & Cotton Mills, Atlanta; Ernest G. Freudenthal, Werthan Bag Corp., Nashville; George Bass, Swift Mfg. Co., Columbus; and W. H. Johnson, Goodyear Tire & Rubber Co., Cartersville.

Chairman of the second technical session was W. A. Thomason, Thomason Textile Service.

Staff report

THERE are so many variables that no set rule can be made that would apply to all mills and all processes to determine the economic value of conversion to larger packages, Rudolph Lux of Whitin Machine Works told those attending the fall meeting of the Textile Quality Control Association at the Barringer Hotel, Charlotte, N. C. There are now so many choices available that it becomes important to determine which package size can be used most profitably, when all of the factors involved are considered, he told the audience.

Continuing, Mr. Lux said that the largest package that can be produced may not always be the optimum package size insofar as the production cost per pound is concerned. Although the reduction in manufacturing cost per pound in a given process under study may not justify the expenditure necessary to produce the larger package, the effect on the succeeding process may be sufficient to justify the conversion.

Mr. Lux concluded his discussion by demonstrating calculations for determining costs on a comparative basis in a typical mill producing carded yarns.

THERE ARE several distinct advantages in converting to larger packages that are applicable to all the processes, June Cheek of Aleo Manufacturing Co., Rockingham, N. C., told the group.

In discussing "Quality Aspects of Large Packages," Mr. Cheek said that when a mill converts to larger packages, whether new or changeover equipment is bought, the latest developments known in the industry are included to effect improvements in mill operations. Also, with larger packages the mill automatically has less creeling which effects an improvement in evenness by assuring fewer thick and thin places in the work. A reduction in reworkable waste also accompanies the change.

June Cheek, Aleo Manufacturing Co., discussed quality aspects of large packages.

Upon increasing package sizes, whether on pickers, frames, or in the spinning room, better control of tension becomes necessary, Mr. Cheek cautioned.

A reduction in creeling is accompanied by a proportionate reduction in unevenness attributable to fewer piecings, and the amount

(Continued on page 118)

Lester D. Sayers, Opp-Micolas Cotton Mills, Opp, Ala., Bill Howard, Dallas Golden, and Spurgeon Morgan, Tallassee (Ala.) Mills.

R. Hartman, W. C. Thompson, and H. G. Harris, Huntsville (Ala.) Mfg. Co.; C. E. Davis, W. Boylston Mfg. Co. of Ala., Montgomery.

Why your choice of sliver weight?

Alabama mill men give reasons for adopting their sliver weights, bank rovings, etc.

They also discussed:
What overhaulers do
What card grinders do
Reworking flexible bends
Dense roving packages
Pneumatic lap controls

Staff report

AN overflow crowd attended the annual fall meeting of the Alabama Textile Operating Executives. The meeting was held in Thach Auditorium, on the campus of the Alabama Polytechnic Institute, Auburn, on October 12 to permit group discussions on mutual problems in carding and spinning.

General Chairman *R. L. Alford*, Dan River Mills, Inc., Montgomery, Ala., opened the meeting. *W. T. Curry*, Cone Mills Corp., Alabama City, Ala., led the discussion on carding; and *John Quenelle*, Avondale Mills, Sycamore, Ala., led the discussion on spinning.

Give your reasons for establishing the size and weight of the stock in process at the pickers, cards, drawing, and roving frames.

The reasons given are legion, but they group themselves about a few common practices. The plants are balanced (process to process, and plant-wide) through the choice of weights, speeds, sizes, drafts, etc. Meanwhile quality is maintained through the same combination of choices.

To illustrate, *Mill E* is quoted: " . . . We feel that 66-gr drawing sliver is suitable for our range of roving numbers, and will give us even roving without sacrificing production at drawing. This weight sliver is less apt to stretch when it is pulled from cans over lifting rolls at slubbers than lighter sliver.

"Since 66-gr sliver gives higher production at drawing without hurting quality, we use 61-gr sliver at cards. This gives same production at cards (as lighter sliver) but with slower speeds which saves on gears, bearings, and other parts. A 14-ounce-per-yard lap is heavy enough so that there is very little stretch from lap roll to feed roll, yet it isn't so heavy that it will interfere with good carding, such as cleaning and paralleling the fibers."

Curry—Carding

One plant reported that the stock at each process is run at the heaviest weight which the machine can draft efficiently, and that this is done to realize maximum machine production.

Mill G holds the view that a 14-ounce-per-yard lap permits better cleaning at both picking and carding operations.

Mill K considers the stock required by each process, and then by checking and testing the results, tries to get the most pounds possible and still maintain the required quality.

Mill I points out that a picker is so constructed that the standard lap varies from 14 to 16 ounces per yard; that cards are so designed that their best sliver weighs from 55 to 65 grains per yard; and that drawing sliver can weigh from 55 to 70 grains per yard and still produce quality work. The plant uses such machine limitations to establish weights; and makes the lightest card sliver practical within the quoted range. The roving weights are established by the size of the fly frame available and the draft required in spinning.

Mill H quotes several factors

used in establishing weight standards. Among them are production requirements and machine capacities, maximum speeds for quality and production, job loads at the various processes, machine draft limitations, and materials handling.

At *Mill N* a lap weight of 70 lb is used to gain an increase in picker production from less doffing time, improvement in card tenders' assignments, improvement in lap quality and waste from the reduced number handled, and a reduction in the lap hauling and handling force.

A 70-gr card sliver is produced because that weight enables the firm to lower doffer speeds, and to enjoy what management feels to be generally a better sliver. Both breaker and finisher drawing sliver weigh 70 grains.

The 70-gr sliver offers several other advantages in the form of fewer drawing deliveries and less floor space needed for a given poundage, an increase in pounds per day per frame and tender, improved maximum range of variation from sliver produced at the lower speeds, and reduced cost per pound.

Limited to a spinning draft of 15, the plant utilizes several roving sizes.

They are:

Hank roving	Package size (")	Range of yarn counts
.50	12 x 6	2.50 to 7.00
.92	12 x 6	8.00 to 13.50
.92	10 x 5	8.00 to 13.50
1.50	10 x 5	13.50 to 23.00

Overhaulers and Grinders. A division of duties and skills exists in the card room, as evidenced by the discussion of the following question:

(a) Please state experience in using card overhauling crews. Be specific in just what overhaulers do when overhauling a card.

(b) When card overhaulers are used, what are the duties of card grinders? Give grinding cycle, pounds produced between grindings, and number of cards set up and ground per grinder per shift.

(c) What method do you use in re-working flexible bends? Is there any mill that does its own grinding? If so, explain how it is done and give approximate cost.

Of the 15 mills in the discussion, three have no overhauling crews, and two report no experience. The remaining plants, in the main, use overhauling crews for any duty other than routine grinding, setting, and light maintenance. A concensus of overhauling practices can be drawn fairly from the details submitted by *Mill I*, as the other plants vary only slightly from the outline of overhaulers' duties given here:

(1) Clothe card, cylinder, or doffer

(2) Surface grind cylinder or doffer where needed

(3) Line and level card

(4) Clean screens and replace bad ones, reset

(5) Check cylinder, doffer, and licker-in bearings

(6) Install reworked flexible bends

(7) Install new flats and chains, and replace worn sprocket shafts

TABLE 1

Card Grinders' Maintenance Schedules

Mill	Cards per shift per grinder: Ground	Cards per shift per grinder: Set up	Time per grinding cycle	Pounds produced between grindings	Remarks
A	4	4	9 days	2160	First grinding: sets flats Second grinding: sets plates, screens, licker-in, mote knives, etc.
C	2	1	15 days	3553	Sets doffers to cylinders of the two cards ground daily
D	3	1	288 hours		
E	2	2	240	2880	
H	2	2	384 (wire clothing)	4700	Metallic clothing ground as needed
K	(see remarks)		240 hours	3000	Grinds four cards daily, including flats on one card; sets backs on two cards one round, and flats on two cards next round; and sets doffers on all four cards every round
L	3	3	312	2180	
N	3	3	11 days	2700-4000	First cycle: sets flats to cylinder, stripper comb to flats, top and bottom front plates, doffer to cylinder, doffer comb to doffer Second cycle: sets licker-in to cylinder, feed plate to licker-in, licker-in to screens, mote knives, top and bottom back plates, cylinder screens, doffer to cylinder, doffer comb to doffer, continuous stripper

(8) Clean all brushes—rebristle where needed

(9) Straighten back and front plates. Polish out rough places

(10) Overhaul coiler head. Replace worn parts and gears

(11) Check coiler and calender trumpets

(12) Install reworked feed rolls

(13) Replace bad lickers-in

(14) Replace bad cylinder and doffer shafts

(15) Clean card thoroughly and reset all setting points

(16) Lubricate card thoroughly before starting

For the manner in which the various mills schedule the card grinders' duties as requested in (b), refer to Table 1.

Flexible bends are sent away for reworking—two of the plants reported that the cost runs about $15.00 per set.

Increasing Roving Bobbin Contents. This information was requested of the plants:

Describe any method you have found successful to increase the net weight of roving on the bobbin.

(a) Give net weight in ounces per bobbin before and after the change (give hank size and package size and whether carded or combed).

(b) How do you control tension throughout the doff?

(c) What is the effect on uniformity?

Mill B put an extra wrap in the flyer pressers and increased bobbin weight (carded stock) on 12″ x 6½″ frames from 52 oz to 64 oz (.60 hank roving) and from 52 oz to 62 oz on .90 hank roving. The tension is controlled, once it is properly set, by humidity, and no effect on uniformity is noted.

Mill C is experimenting with an additional wrap on the presser finger, and has ordered one set of 10″ x 5″ and one set of 12″ x 6″ flyers with double presser eyes for use in the experiment. The extra wrap increases the bobbin content from 40 to 48 oz. There has been no change in uniformity; and by changing the twist by four teeth, the tension is controlled in the same way as with the regular roving.

Mill E increased the number of turns about the presser finger from two to three, and received a 14.8% increase in bobbin weight. The tension was adjusted to offset the added bobbin density, and still runs for the entire doff without trouble. The package is 12″ x 6½″, holding carded .60 and .70 hank roving. There is no difference in uniformity.

Mill H effected an increase by changing taper gears and increasing the flyer size. There have been no tension nor uniformity troubles.

Mill I increased average bobbin weight from 23 oz to 27 oz by frame maintenance, and by experimenting with lay, taper, and tension. The increase brought no trouble with tension, and the uniformity ranges from unchanged to slightly improved.

Mill M has yet to control tension enough to permit an appreciable increase in bobbin weight.

Pneumatic Picker Lap Controls. Four mills either reported no experience or did not answer the multiple question:

1. What experience have you had with pneumatic lap controls on pickers?

2. What type do you consider best?

3. What increase in lap weight have you been able to achieve?

4. How has it affected your card jobs?

Eleven mills answered that the controls gave them an increase in lap weight. However, only five plants were able to change card jobs as a direct result of the lap controls. At least one other plant reported that, although no cards were added to the tenders' jobs, cleaning frequencies were increased in a move to improve quality.

The most dramatic increase came at *Mill K* where the lap controls and the introduction of 18″ x 42″ card coilers permitted card job increases of 33%. The tenders, in having to lay up fewer laps per shift, are free to patrol more cards. The amount of increase attributable to the lap controls was not given, but it usually is in proportion to the saving in lap laying time.

The increases in lap lengths experienced at some of the plants are:

Mill	Increase in lap weight (lb) From	To
A	43	57
C	49	58
E*	49	59.5
F	48	57
H	41	53
N	56	70

*In addition to pneumatic lap controls, uses more weight on calender rolls.

One plant representative who volunteered the information that his firm operated with laps weighing 83 lb each, was asked:

Q. "What is the lap diameter?"

A. "From 19½ inches to 20 inches."

Q. "Does the pneumatic system give any mechanical trouble?"

A. "Not now. A sampson or two broke at first."

Q. "Do the laps bloom when left in storage for 24 to 36 hours?"

A. "No."

Q. "How many pickers per operator?"

A. "Four."

Q. "Does one man lay the laps?"

A. "Yes."

Q. "How do you transport the laps from picking to carding?"

A. "On a lap buggy which holds two laps."

Q. "Did you make any personnel changes as a result of the installation?"

A. "We eliminated a card tender."

Q. "How much air pressure does the system use?"

A. "We run with 60 psi."

Q. "Did you make any changes in licker-in setting?"

A. "No."

Q. "Do the laps break between the lap roll and the feed roll?"

A. "No. The laps do not tear up in carding."

Q. "Do you have any trouble pulling lap pins?"

A. "The lap pins seem to give even less trouble with the heavy laps."

Q. "Do you notice any increase in nep count?"

A. "No."

The spinning discussion will be given in an early edition of this magazine.—The Editors.

The mirage of tax reduction

by Ringgold Arden

Exclusive

BUSINESS men who have been squirming under the heavy hand of Uncle Snoopy may have found a note of cheer in the fact that a Republican Congressman from Connecticut and a Democratic Congressman from Florida, who are both members of the House Ways and Means Committee, have introduced bills providing for reductions in income taxes on the theory that if the government can't get it, it can't spend it. The most interesting thing about the bills these gentlemen have proposed is the drastic reduction in the socialistic surtax rates now afflicting everybody with enough creative ability to be a really valuable citizen.

The Sadlak and Herlong bills will be violently opposed by many powerful interests, because they would severely curtail the total take which the government is now extracting from the pockets of the public, and it is quite likely that nothing may come of this general tax decrease. You can't run a welfare state without lots of money, and regardless of what the people of the United States think about taxes, they seem to be very fond of the "free" money that the government takes out of their pockets and hands them.

Now that this question of tax rates is going to be given a thorough airing in Congress, and business men have been invited to testify at public hearings on January 7, 1958, the business community may have an opportunity which might not come again in a generation. It is certainly to be hoped that outstanding and highly vocal leaders in the business world will present to the House Ways and Means Committee some very cogent arguments in favor of junking these confiscatory, socialistic surtax rates which are so effectually strangling individual initiative.

WHETHER tax rates in general are too high is a matter of public policy which will have to be determined by Congress and the Administration, but there can not be the slightest question about the confiscatory surtax rates being too high. There may have been some color of excuse for these rates during the last war, but they should certainly have been repealed immediately after the war.

Except as a wartime emergency measure, these confiscatory rates are nothing but a part of the socialist conspiracy to destroy wealth and retard economic progress so as to further the aspirations of those who are obsessed with the idea that socialism is a workable and desirable political system. Except in an acute emergency, to levy a tax rate of 91 per cent on a man's income is little different from plain stealing. The logic behind it is that of the holdup man who says, "You've got it, and I want it."

These fantastically high tax rates produce a relatively small percentage of the tax money which the government collects. These rates remain in effect for socialistic and demagogic reasons. The socialists want to keep the rates to wreck the existing American economic system. The demagogues want to keep them so that they can keep on telling a gullible public that it is getting vast benefits at the expense of the rich.

It takes a courageous politician to tell the public the truth about taxes, and the "soak-the-rich" doctrine has a powerful demagogic appeal. Practically every tax reduction scheme which has been proposed during the last ten years has been outright demagogery, aimed at trying to give everybody a few peanuts, and there has been practically no movement on foot to correct the terrible injustice of confiscating incomes under the guise of taxation.

AT THE TIME that Karl Marx and his associates were advocating these confiscatory income tax rates, most of the people who had money had simply inherited property, and had done nothing whatever to deserve the tremendous incomes they enjoyed. Most of these people created nothing and added nothing to the public wealth—they were purely parasites. It was not difficult therefore for the communists to whip up a storm of antagonism toward them.

The situation in the United States is entirely different. Only a trifling number of persons are rich because of inherited real property. Most of the wealth in the United States is highly fluid wealth, and the secret of prosperity is to keep it flowing. What generally keeps it flowing at the fastest rate are new inventions which develop new things that people eagerly want. New inventions, and the infinite variety of collateral developments that go with them, should cause a great growth of small, prosperous businesses offering new labor opportunities and enriching countless neighborhoods with good payrolls.

THE CURRENT tax situation tends to stifle this sort of development, rather than encourage it. The small operator has little chance of success when he has no access to capital markets, and when the government skims all of the cream off of his earnings so that there is little to put back into a business for development. The big operator is not interested in improvements unless they are of such magnitude

as to justify the tremendous expense involved in changing a big manufacturing plant to produce new designs. The tendency in the big corporation is to freeze designs for quantity production and change them as little as possible until absolutely forced to do so. It is generally competition from small concerns that does the forcing, and the more confiscatory taxation tends to strangle the small concerns, the less progress needs to be made by the big ones.

That persons with creative ability often reach the point where it is not worthwhile trying to use their ability to make more is an old story. The successful movie star or doctor or lawyer or independent business man soon reaches the point where he realizes the futility of doing all the work and having the government take 80 to 90 per cent of his earnings.

The prosperity of this country is not generated by the rank and file working people on payrolls who pay most of the taxes. It is generated by the little handful of extraordinarily able people who run the whole show, and whose imaginations and abilities furnish all of the opportunities for the production of wealth. The socialists and the demagogues are out gunning for these people as if they were dangerous subversives who should be rigorously weeded out of the economic system.

AMERICAN people probably never did a more stupid thing than adopting the Sixteenth Amendment to the Constitution without some definite limitation on the rapacity of a central government, and the movement now on foot to adopt a Constitutional amendment to specify the limits within which Congress can levy income taxes needs to be aggressively pushed.

The people who framed our Constitution were familiar with the evils of income taxes and outlawed them very clearly in the original Constitution by stating:

> No capitation, or other direct, tax shall be laid, unless in proportion to the census or enumeration hereinbefore directed to be taken.

This made it quite plain that there should be uniformity of taxation, and the Sixteenth Amendment made it possible for Congress to confiscate money as well as levy taxes.

WHILE this whole matter of tax injustice needs to be thoroughly revised and the Sadlak and Herlong bills do not go nearly far enough to establish a just basis of taxation, they are certainly a step in the right direction. People who are the worst sufferers from tax inequities should welcome this opportunity to do something about them.

Large packages *(from page 113)*

of reworkable waste is reduced by the same amount. Decreased waste in subsequent processes becomes evident throughout, and with a decrease in the number of knots, an improvement in the running condition of the weave room is noted in the final stage, he concluded.

RUDOLPH Lux, Whitin Machine Works; June Cheek, Aleo Manufacturing Co.; Elmer McVey, Saco-Lowell Shops; Jack Scott, Carlton Yarn Mills; Ashley Roberts, China Grove Cotton Mills; and Sam King, Limestone Manufacturing Co., comprised a panel to discuss "Optimum Size Packages" before the group.

The first question was related to the lightest hank roving that could be run on 12 x 6, 12 x 6½, and 12 x 7 frames. A member of the panel stated that 1.5 hk on 12 x 6 was about the limit; 1.35 hk on 12 x 6½; and 1 hk on 12 x 7. Some mills go to 1.25 hk on 12 x 7 by using a new type presser, one man said.

A mill spokesman emphasized that larger packages help reduce long term variation and referred to an article by James M. Heavner which appeared in TEXTILE INDUSTRIES for August, 1956, pp. 108-113.

Someone asked why a mill used some 16″ x 42″ cans on drawing and some 15″ x 42″. The mill representative stated that most of the cans were 15″ x 42″, and this size was dominant because operators liked them better from viewpoint of weight. Three 16″ x 42″ cans is all one operator can push because of the weight factor, he concluded.

One man commented that a barré effect in denim was found to be caused by traverse and dwell on the spinning frames on 8s run with a 3.65 twist multiplier. Dwell at the top of the traverse was a big contributing factor. Upon rebuilding the frames, they ran satisfactorily at 205 rpm front roll speed, which was established as optimum. Experiments were tried with front roll speed of 250 rpm, but this speed had to be reduced gradually until the optimum was found.

Another mill representative stated that after installing a pneumatic broken end collector system, waste in his mill decreased from 1.2 per cent to 0.6 per cent.

One questioner wanted to know the finest numbers spun on canback spinning. An authority on the subject said that up to 30s had been spun on an experimental basis. This system may be used on numbers up through print cloth, but the problem lies in packaging the sliver. Too much floor space is required at present, he said.

Another wanted to know why sliver was not condensed to require less space and smaller cans. An answer indicated that condensing too much makes a core which does not permit good drafting in the next process.

In one instance trouble was reported with the "drop presser" on roving frames equipped with stop motion putting too much total tension on the roving, thereby producing more breaks at spinning because of higher unevenness. One mill reported putting 72 ounces on a 12 x 7 equipped with the drop presser. The package ultimately depends upon the amount of twist and wrap, according to this speaker.

Courtesy The Foxboro Co.

Instruments at left automatically control cooking of size in kettles at right. Note recording chart at extreme left which serves as a check on the operation of the adjoining cut cam control.

WARP SIZING

Article 20—Conclusion*

Controls available for cooking size, maintaining level and temperature of size in size box, moisture, stretch, tension, and squeeze roll pressures

By Paul V. Seydel, D.Sc.
Seydel-Woolley & Co.

Exclusive

WE ARE getting further and further into the scientific age. Its advent has brought forth more automatic controls for industry, and the slasher room is getting its share.

Automatic control in the slasher room does not necessarily save labor in the production of uniformly sized yarns. More than anything else, it makes possible the desired uniformity which without instruments was striven for as a sort of art on the part of the slasher men. Like the perfect art, it was usually just a dream and was rarely seen.

Today, however, we can control the cooking of the size, the temperature and level in the size box, the viscosity of the size, the moisture content, stretch, steam, and speed. With good cotton and good sizing materials, there is no longer any excuse for a poor warp—the guesswork is gone.

More mills are finding that the right kind of control instruments on their size system is a good investment. Any good control that operates correctly is a valuable asset. There is, however, a serious danger: Some mill overseers feel after investing in these instruments that they can forget them.

Like any piece of machinery, they at times get out of order. When the overseer has forgotten them and is relying on them to be infallible, considerable bad work may be done before it is caught. However, if the man in charge will use a reasonable amount of care and common sense to see that these instruments are functioning correctly, they are invaluable and will pay for themselves over a period of time.

Maintenance and Care of Control Instruments. All control instruments should be checked at regular intervals by standard thermometers and watches known to be correct, also by laboratory moisture and size tests, and elongation tests

It is an unfortunate fact that some supervisors who insist on regular and periodic maintenance checks on their looms, slashers, and other textile machinery, will buy indicating and control instruments, have them installed, and then forget them completely. Many of these instruments are much more sensitive than textile machinery, and require proper care and maintenance.

Checking and maintenance of instruments should be under the care and supervision of only one man or group of men in the mill, and these people must be properly trained for their work. Some mills have even found that their troubles with instruments decrease by the simple expedient of keeping the instrument cases locked, so that only personnel who actually understand the operation of the in-

*With the publication of this article on controls for the warp sizing operation, this series dealing with all phases of the warp sizing operation for cotton yarns and yarns produced from man-made fibers, is concluded.

Beginning in the May, 1956, issue of this magazine, the series covered in detail the following subjects: The purpose and importance of sizing; a description of the fibers and yarns to be sized; the materials for sizing; analysis and testing of materials for sizing; the sizing process; the sized material (properties of a well-sized warp, testing and analysis, weaving defects and their remedies); warp sizing equipment.

Reprinting of the entire series in book form is planned for the spring of 1958. Readers interested in obtaining the book, which will also contain an up-to-date and practical bibliography on the subject plus handy reference data, should write to The Editors, TEXTILE INDUSTRIES, *806 Peachtree St., N. E., Atlanta 8, Ga.*

struments have access to the working parts. A further advantage of this is that when something does go wrong, responsibility can be placed where it belongs. This fact alone generally helps obtain smooth operations.

Training of personnel in the use, calibration, and maintenance of instruments is best left to the manufacturers of the instruments. They are usually glad to assist in this, in order to be certain that their instruments do not get the blame for faulty operation. Their representatives will instruct in the proper use and operation; they can furnish instructional literature, and some of the companies even conduct schools in instrument techniques.

Another point to be careful of in use of instruments is that they should be located in such a position that the instruments themselves, their recording or controlling cases, and the electric or pneumatic lines connecting them are not subject to damage by traffic in materials handling, or to excessive vibration or corrosion.

Naturally an instrument case subjected to periodic collisions with dollies will not do its best work. Capillary tubes or wires which are so placed that they are stepped on, or have heavy trucks roll over them will not last long. Nor can an instrument cabinet be placed near a steam safety valve which is continually popping off, and last a normal life.

Three sources of troubles which are common to most types of control instruments are dirty air, loose electrical contacts, and corroded switches—either contact or mercury switches.

The capillary lines handling air for pneumatic controls are very fine lines. Only a very small amount of oily dirt or fly can easily clog these lines. They are subject to corrosion, also, and the oil and water mixture which may sometimes be carried along by the air need not cause more than a small amount of corrosion to shut the lines off completely. This is easy enough to find, but a partial closure, causing erratic operation, is not so easily located. Be sure that the air supply has plenty of filters and drip wells, and that these are properly maintained.

Loose connections or loose contacts are generally the fault of improper installation, or of excessive vibration. Particularly where much vibration is present, this should be remedied.

Electrical contact points of switches must be kept clean, and should be replaced when worn or corroded. Attempting to file them usually results in uneven contact surfaces which do not function properly, will arc readily, and soon go bad again.

In the case of mercury switches, as long as they look clean, they will usually operate well. Once the tube begins to leak air, the mercury will corrode each time a spark is made, and the oxide of mercury will first darken the tube wall, then contaminate the mercury surface. The switch will soon heat up and will eventually blow out under such conditions.

A further precaution with mercury switches is to have them so installed that they are not subject to vibration. The vibrating mercury pool will, of course, cause the switch to spark, and to cut off and on when it is not supposed to. A well-designed mercury tube requires a lot of vibration to cause such troubles, as the pool of mercury should move all at once from one end to the other. However, it is a possible source of trouble.

An instrument with a mercury switch should be so situated that it cannot be moved, otherwise, the mercury switch will cut off and on at the wrong point.

Proper training in instrument care includes development of proper understanding of lubrication. Manufacturer's recommendations should be carefully followed in lubricating moving instrument parts. Inadequate oiling or the wrong kind of oil will result in binding of the parts and unnecessary wear. Too much lubricant will collect dust and fly and hold it where it can damage the instrument by its abrasive action.

With reference to thermometric controls and indicating instruments in particular, there are a few points which should be taken under consideration. The usual type of instrument depends for the motion on the indicating pen or controlling arm, development of pressure in a spiral flat metal tube. The pressure is developed by expansion of a liquid such as mercury, a vapor, or a gas.

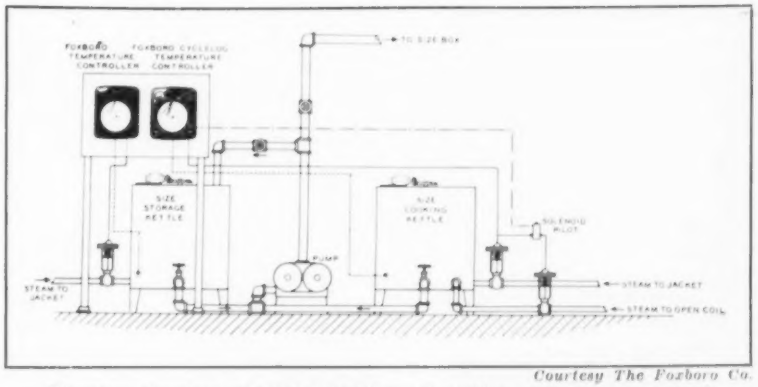
Therefore, one should take great care of such instruments, handling the parts carefully, and installing them away from locations subject to much vibration. Carrying the instrument by the tube is one easy way to damage the capillary tube connections. Careless handling in installing the bulb is another. One should particularly watch out for the joints of the tube in the case and next to the bulb, as it is here that the instrument is most easily damaged.

Only a very tiny leak is needed to render the thermometric instruments non-functional. In the case of liquid-operated instruments, the loss of only a very small amount of liquid will throw the reading quite far off. In this, the liquid-operated systems have an advantage over a gas or vapor operated system, for in the latter, a small leak will cause a small error, which will grow gradually as the leakage progresses. Often such an instrument will read incorrectly for a long time before the error has become great enough to be obvious. In the meantime the size box temperature has been off, or the steam temperature not properly controlled.

Such tiny leaks may be the result of corrosion as well as from mishandling or vibration. The thermometer bulb should be periodically inspected to determine its condition, and regular checks of the system by comparing the readings with a standard thermometer should be made.

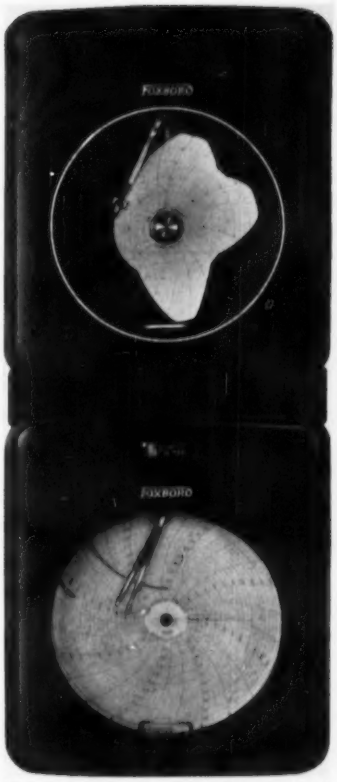
One other precaution should be taken when using liquid and vapor-filled systems. (The vapor system contains both liquid and vapor.) If the location of the bulb relative to the instrument case is changed, the instrument will require recalibration. Raising the bulb will increase the pressure at the instrument case by a factor equivalent to the difference in pressure head of the liquid between the two bulb locations.

These "control instruments" may be merely recording thermometers, which can be watched easily by



Courtesy The Foxboro Co.

Diagram showing suggested location of cooking and storage control instruments.



The cut cam for cooking control, and (below) the recording instrument.

the overseer, or they may be more elaborate regulating instruments as well, to keep temperatures constant, or a combination of recording and regulating.

Many different controls have been placed on the market by the various instrument manufacturers, several of which will be described.

Size Cooking Controls. For size cooking, instruments have been developed so that all the size maker has to do is to weigh in his materials, turn on a switch, and draw off the finished size into the storage kettle. They may even be equipped with a light that flashes, or a bell that rings when the mix is cooked, if he desires.

The various gadgets mentioned in Article 8 for checking level of the water added to the cooking kettle, and the automatic water meter, may also be considered as controls for the size make-up process.

The cooking controls manufactured by several companies for cooking starch-based sizes utilize a cut cam with a cam follower which controls the steam valve. By means of this, the rate of bringing the size batch to a boil can be controlled, as well as the time and temperature at which it is cooked. The photo on page 119 shows part of an instrument board with one of the cut cams and a recording chart which acts as a check on the operation of the cam.

A graph may be pasted on the cam so that its operation range can be easily read. Several cams may be used as desired for cooking different types of starch, such as thin-boiling corn or potato starch which require different cooking periods than normal corn starch. Cams also can be made for holding the batch at lower temperatures for any given period before raising to a boil, such as in the use of enzyme thinners, and also for giving definite times of cold mixing before the heat is applied.

This type of control is particularly useful in small mills where there is not enough actual cooking to have a man on full time, so that some batches might be undercooked with resultant shedding, or overcooked, giving too low a viscosity, while the size cooker is occupied with his other duties.

The steam valves are actuated by air pressure, which is released or cut off as needed by the control instruments.

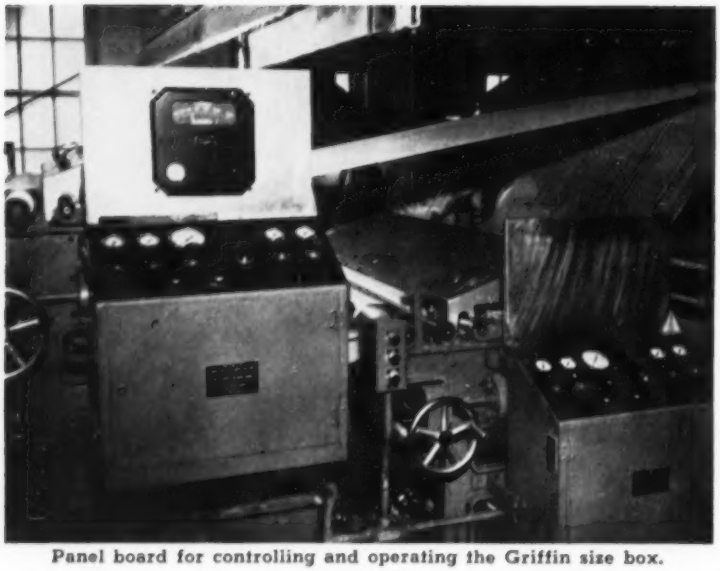
In cooking size, and in keeping it warm after cooking, no control system should be used that cuts the steam completely off, because this results in uneven viscosities. In extreme cases the condition may result in lumpy size. Where on-and-off type controls are utilized instead of throttling type, this can be taken care of by using a small bypass valve which will allow a continual flow of steam to the size, but not quite enough for the desired purpose. The on-and-off controls can then supply additional amounts of steam as needed.

Cooking kettle and storage kettle controls should take into consideration the proper location of the thermometer bulb. This should be located far enough from the steam coil to be certain that it is reading the correct temperature of the size, and is not influenced by the heat from the coils.

When cooking and storage controls are not operating properly, there are a couple of points to note for trouble before blaming the instrument. If the thermometer bulb is caked with size it will not read properly; if the closed coils of the storage kettle are so caked, they will not heat properly. Good housekeeping and continual cleaning will eliminate this difficulty.

Occasionally, it is found that the valves are clogged, or that someone has inadvertently partially closed one of the steam valves, so that an inadequate supply of steam is obtained, making the cooking cycle slow.

Finish Level Control. There is on the market a control for size cooking kettles which utilizes measurement of pressure head to control the level of size in the cooking



Panel board for controlling and operating the Griffin size box.

kettle. On pressing a button, the control adds a predetermined amount of cold water to the kettle, then shuts off the flow.

After the size has been through the controlled cooking cycle another button is pressed, and the size mix is brought up to the proper finished volume by automatic addition of hot water.

All we need now is an automatic gadget which can lay in the lease on pattern goods.

Size Box Controls. The size box level controls have been described on page (161).

The size box temperature controls are thermostatically regulated air-controlled steam valves which open when the temperature falls too low, and close again as it rises to the proper level.

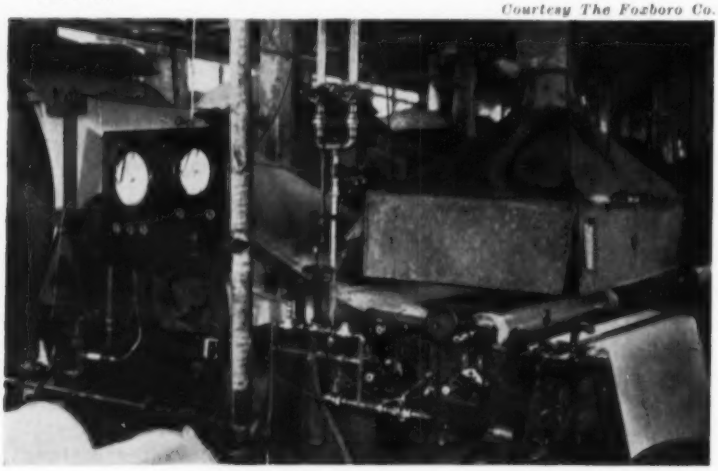
For such heat controls, particularly in the size boxes, the throttling type of control is to be preferred to the on-and-off type, as it gives more even heating. In the size box, it allows continual stirring of the size by letting in live steam, so that "dead corners" do not result where the size may cool too much and set to a gel.

In many cases an equivalent type of control may be obtained by use of a small by-pass line that is left open, and a thermostatically regulated on-and-off valve.

Throttling type controls are preferable with size box level control, to prevent size from cooling and clogging supply lines.

Slasher equipped with automatic size box and cylinder temperature controls.

Courtesy The Foxboro Co.



Cylinder Temperature Controls. Cylinder temperatures should be set and kept constant. Theoretically it may be possible to control the amount of drying by varying the heat in the cylinders, but actually the time lag in cooling or heating such large masses makes this method impractical. Therefore, drying is generally controlled through variations in the slasher speed.

Cylinder temperature may be controlled either by controlling the temperature (the most common method) or by controlling the pressure of the steam, in view of the fact that temperature of saturated steam depends on the pressure.

Recording units are made for cylinder controls, but they serve no particular purpose other than to check the control instruments, because the temperatures should remain the same all through the operation. An occasional glance at an indicating thermometer or a pressure gauge will serve the same purpose.

There should be separate controls for each cylinder so as to be able to control the temperature gradient between cylinders. Variations in condensate removal and steam requirements between the two (or several) cylinders make accurate group control of cylinders impractical.

With controls operated on a pressure basis, difficulties might be encountered when the cylinder collects too much air. Some controls check this by having an extra control on the condensate temperature. When this installation is used, if too much air accumulates, the condensate temperature will drop, and the control will then open a by-pass valve to release the air.

For efficient control, each slasher cylinder must be trapped separately.

Moisture Controls. For uniformi-

ty in slashing, the moisture controls are the most important controls (assuming, of course, that the slasher man is capable of normal control over the other factors such as cooking, size level, etc.)

The moisture regain in the yarn is the most difficult factor to control without instruments, and is highly important in the production of a good uniform size film. Too often there is a tendency in the absence of controls to dry the yarn too much, because of fear of mildewed warps. Thus the yarn loses strength through lack of sufficient moisture, and the size film becomes less elastic and more brittle, with consequent tendency to shed.

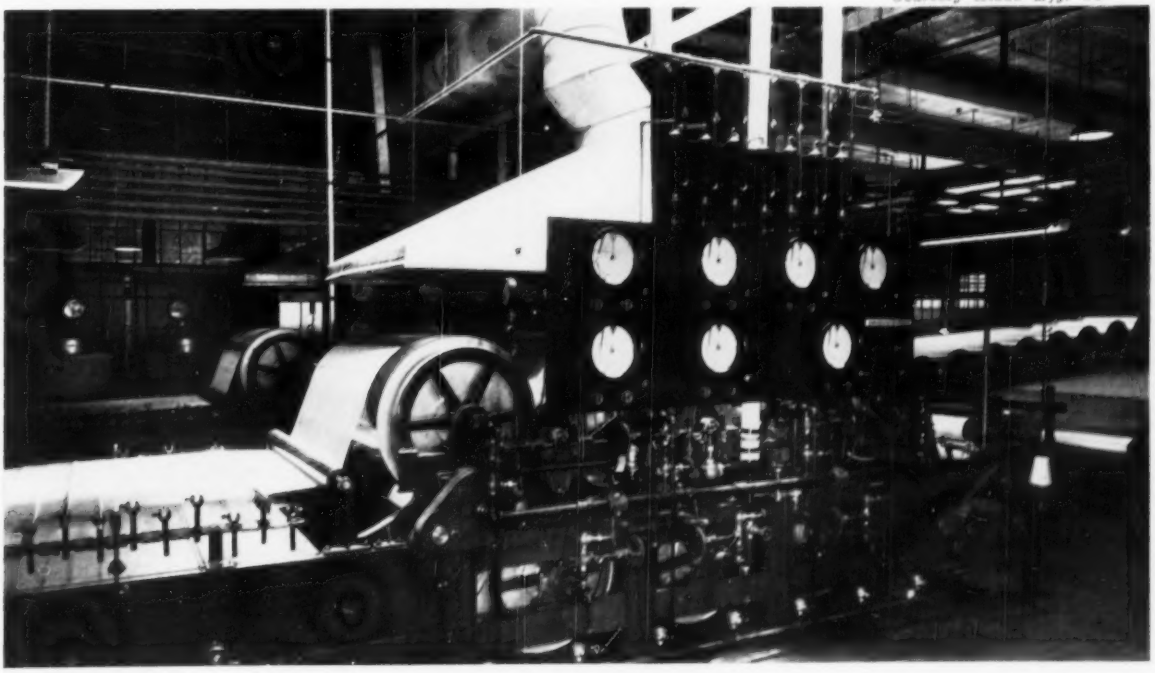
Moisture control methods are generally dependent on measurement of electrical resistance of the yarn, which varies with the percentage moisture. Dry yarn has a high resistance, and damp yarns have comparatively low resistance.

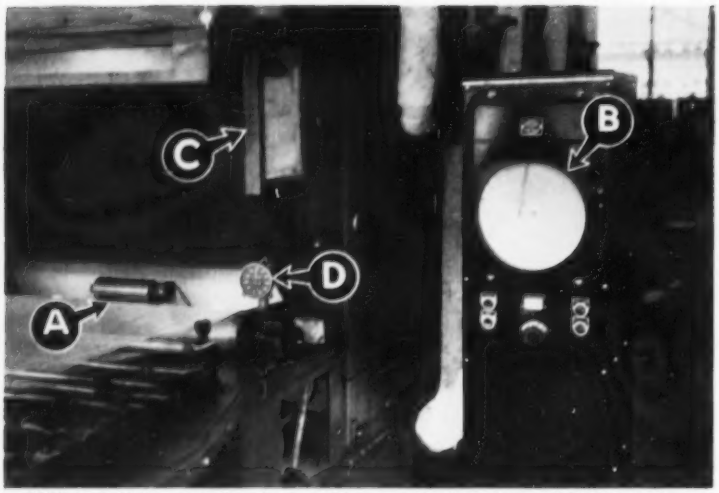
The resistance is measured across the yarn between two metallic rolls, one of which is usually one of the guiding rolls on the slasher or the measuring roll. The other is a small detector roll which

Use of a bypass valve on a steam line controlled with an automatic off-and-on valve allows more uniform steam flow.

Multi-cylinder slasher with individual cylinder control for temperature.

Courtesy Kidde Mfg. Co





Mill installation photo of a moisture control system which includes: A, contact roll or electrode for controlling speed of slasher; B, 24-hour recording chart of moisture content; C, instruction sheet for moisture controls; D, speed indicator. It is preferable to have the contact roll nearer the loom beam (on drag roll).

is furnished with the controls.

The electrical resistance between these two contacts on the yarn is transmitted to the recording apparatus. Since the resistance depends on the percentage moisture, the recorder can be calibrated to read directly in percentage moisture, giving a permanent record of slasher drying operation. At the same time that the instrument measures the resistance, it measures any changes in resistance. The instrument transmits an electric impulse to the speed control motors to slow the slasher if the resistance has decreased, or speed it up if the resistance has increased, thus correcting for the variation.

Indicating type of moisture meter on a slasher.

One instrument manufacturer bases his method of moisture detection for control purposes on measurement of the capacitance of a condenser, between the plates of which the warp sheet moves. Since the dielectric constant of water is very high compared with that of cotton, the capacitance of the condenser will vary with the moisture content of the warp.

This instrument is quite easily calibrated for changes in materials run. A dry sample of the material to be processed is placed between the electrodes, and a knob on the panel turned until the instrument reads "dry." Calibration units are also furnished so that the instrument may be standardized without a sample.

As far as the practical slasher man is concerned, except for the method used for calibration, this instrument indicates, records, and controls in about the same manner as those already on the market.

A comparatively recent innovation is a machine which is said to be so designed that it measures resistance, capacitance, and generation of a static electricity field all at once. It is claimed by the manufacturer that this system is more reliable, being based on three factors rather than one. This machine, incidentally, utilizes three detector rolls rather than a single roll. The three rolls are placed on the center and each side of the warp sheet, and the machine will customarily react to the part of the warp sheet which is dampest.

It is found of advantage with any of these detector systems to have the detector rolls so mounted that they can be easily moved from side to side of the warp sheet. This enables the operator to detect any side-to-side variation in drying, which may be a result of off-center rolls, improperly wound

rolls, faulty condensate removal in cylinders, improper air flow in hot air chambers, or any one of a number of causes.

The automatic speed controls may be taken out of the circuit by throwing a switch, when the slasher man wishes to run a lease, doff, or control the slasher manually for any other reason. The slasher stop and slow motions may also be tied in to throw out the speed control automatically. The controls may be set to run any desired moisture content in the yarn.

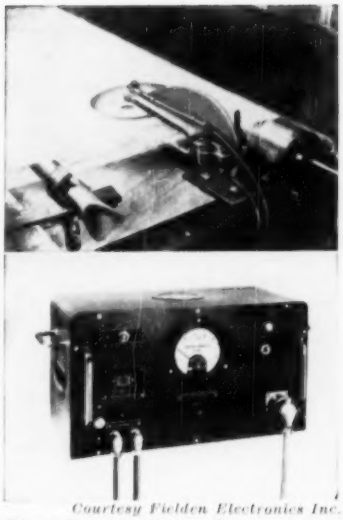
Moisture controls, because of their complicated electronic construction, require more careful supervision than the other types of slasher controls. An adequate inspection and maintenance schedule must be followed, and the controls should be checked immediately whenever it is suspected that they may be off. An improperly operating moisture control is worse than no control at all.

Unfortunately, it is the experience of anyone using controls that no control is perfect, and it is not possible to sit back and relax as soon as a complete control system is installed in the slasher room. Like any other piece of machinery controls are subject to break-down, but with many of the controls, this break-down is not always as readily noted as with the failure of a motor or a gear.

In considering the maintenance of moisture controls, one should consider all the general points brought up at the first part of this article, plus a regular periodic replacement of dry cell batteries and vacuum tubes. The schedule for such replacement should be that recommended by the manufacturer. The instrument should be checked by periodic testing of samples of slashed yarn, for laboratory determination of moisture content.

Stretch and Tension Controls. Control of tension in the creel, and correction of excessive stretch as a result of excessive tension at different points in the slasher have been mentioned elsewhere in this series.

The amount of stretch should be as small as possible consistent with proper operation of the slasher,



Courtesy Fielden Electronics Inc.

The "Drimeter" for the measurement and control of moisture. Upper photo shows the condenser installed on a slasher. Below, the hygrometer unit.

and the yarn should be prevented from rolling or kinking. It has generally been found impractical to reduce the amount of stretch below 1 to 1½ per cent. Where the stretch is over two per cent, the cause should be investigated and removed.

Stretch is controlled to a certain extent by the amount of cloth on the drag roll, also by the number of teeth in the gears used to drive the metal rolls in the size box.

Fairly accurate control of stretch may be obtained by utilizing a three-roll system similar to the drag roll and its two auxiliary rolls. This group of rolls is located behind the size box.

The amount of cloth covering this roll and that covering the forward drag roll can be varied in relation to each other so that a definite and fairly exact amount of stretch is obtained between the two. They must, however, be properly adjusted with relation to the speed of the squeeze rolls, so that tension between and on both sides of the squeeze rolls will be constant. Slippage on the metal rolls will take care of slight variations in adjustment, but the yarn will not slip enough to take care of a badly adjusted system.

It might be noted at this point, that with the usual slasher set-up when a change is made from a heavy set to a light set without any change in slasher settings, it is often found that the lighter sets will show more stretch than the heavy sets had shown.

In normal slasher operation with yarn-driven cylinders, the slasher is so set that there is an appreciable amount of tension during operation between the drag roll and the squeeze rolls. Since the squeeze rolls are wet with a rather slippery size, one would expect some slippage of yarn between the squeeze rolls due to this tension, and the slippage actually occurs. When running heavy sets, the total tension of the warp sheet is much greater, as the total tension is the sum of the individual yarn tension, and the individual yarn tension, in turn, is dependent principally on the amount of stretch. Therefore, with the higher resistance to being stretched which one has in a heavy set, more slippage occurs, and the heavy set will consequently show less measured stretch than will the light set.

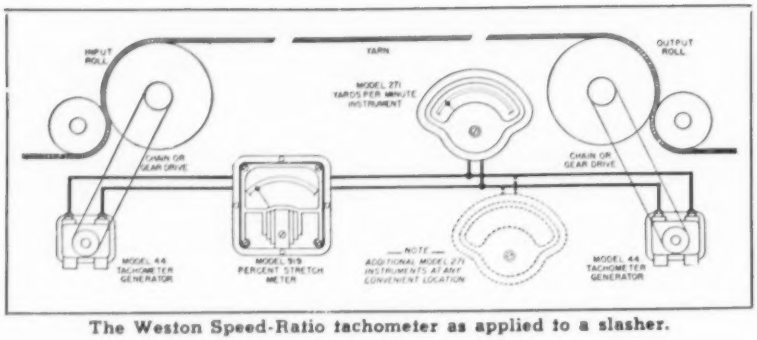
The "falling roll" is a small iron roll that revolves freely in slots. It is supported by the warp sheet between two wooden rolls just before the yarns enter the size box. This roll exerts a certain amount of control on sudden variation in tensions. Its principal action is to take up slack so as to prevent kinking when the section beams overrun slightly as a result of changes in slasher speed.

The point where the most harm is done from too much tension is between the finishing roll and the cylinder. The yarn at this point is wet and easily stretched. It then comes in contact with the hot cylinder and is dried, and the size film is set before it has the opportunity to return to its original length. This causes a permanent set, reducing the elasticity of the yarn.

One of the latest developments in the control of slasher operation is the tension control. It controls only the tension with which the yarn is wound on the loom beam. Although motors are also furnished to drive the squeeze rolls and the drag roll (or delivery roll), the tension between these points may still be controlled by gears

Shore Instrument & Mfg. Co., Inc.

Shore Durometer for testing hardness of rubber. A similar instrument may be used for checking beam density.


INPUT ROLL
YARN
OUTPUT ROLL
MODEL 271 YARDS PER MINUTE INSTRUMENT
CHAIN OR GEAR DRIVE
CHAIN OR GEAR DRIVE
MODEL 44 TACHOMETER GENERATOR
MODEL 919 PERCENT STRETCH METER
— NOTE — ADDITIONAL MODEL 271 INSTRUMENTS AT ANY CONVENIENT LOCATION
MODEL 44 TACHOMETER GENERATOR

The Weston Speed-Ratio tachometer as applied to a slasher.

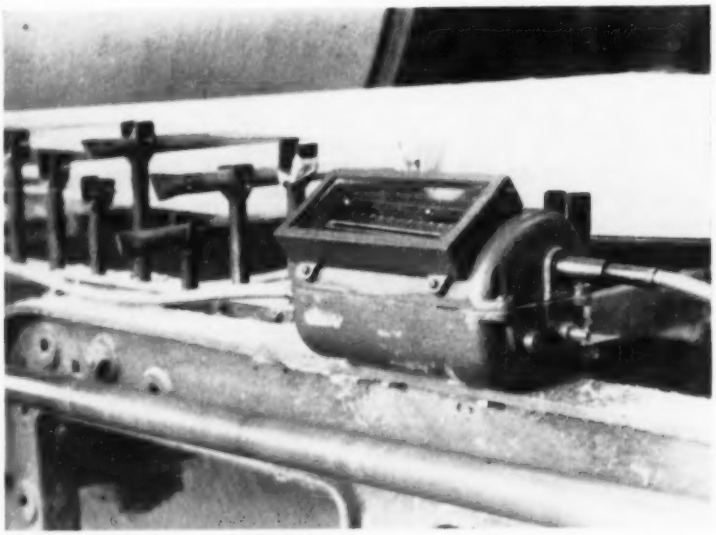
and by the amount of cloth on the drag roll. These surface speeds once being set, remain the same, and no attempt is made to control the tension between these points. In this instance the stretch is more important than the tension.

The control operates through a d-c motor which replaces the usual friction clutch. The current is furnished by a motor-generator set designed to adjust its output according to the load on the d-c motor. As the diameter of the beam increases, there is more pull on the yarn if the speed remains constant. The control "feels" this extra pull, and decreases the speed of the winding motor sufficiently to maintain the tension constant. The loom beam is therefore wound with the same tension throughout, and all beams have the same tension. The operator does not have to rely on guesswork in operating the friction clutch.

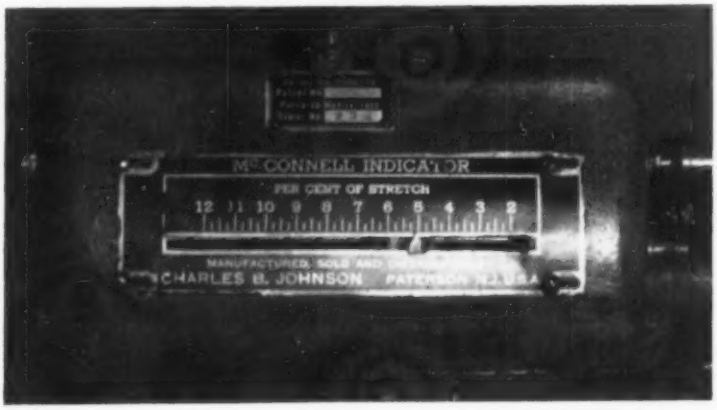
The amount of tension desired may be adjusted by means of a rheostat, but once it is adjusted satisfactorily, no further attention is required. The action is said to be independent of variation in the voltage of the alternating current supply.

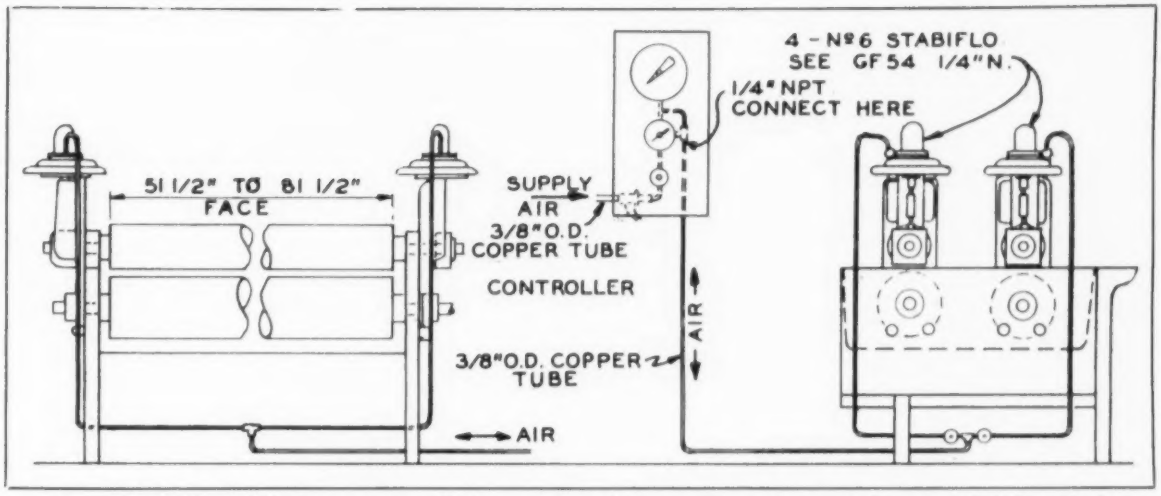
An additional method of control for determining whether or not the loom beam tension is packing the yarn properly is through determining the hardness of the wound beam. It has been customary for years for the slasher operator to determine this as best he could by shoving his thumb into the yarns. This hardness may be checked more accurately by the use of the Shore Durometer. Once a mill has determined to what hardness its loom beams should be wound to produce the best results with the mill's constructions and loom settings, it is then easy to duplicate the results objectively.

Stretch Meters. Weston has developed an instrument designated as a Speed-Ratio Tachometer which is capable of measuring both yards per minute and the amount of stretch. The yards-per-minute



This indicator registers the percentage of stretch between the back roll and the front delivery roll. Below is a close-up view of this instrument, showing method of indication.





Pneumatic loading of slasher squeeze rolls is a comparatively recent development. Shown at left is end elevation of loader installation on slasher size box. At right is side elevation. Load on squeeze rolls may be varied.

is measured by a small generator driven by a measuring roll placed on the slasher where it is desired to measure the speed. The voltage generated by this specially designed generator is proportional to its speed of rotation, so that a voltmeter attached may be calibrated in terms of yards per minute.

Where it is desired to measure stretch, generators are placed so that they are driven by measuring rolls both front and rear on the slasher and a Ratio-Meter measures the difference in voltage generated by the two generators. Since this difference is proportional to the difference in speed of the two measuring rolls, this meter may be calibrated to read directly in per cent stretch.

While this type is indicating and not controlling, it may be used as a basis for controlling, and manual adjustment can of course be made.

Although the stretch meter shows promise of some value when used with cotton at stretches around 1½%, it is much more useful with rayon, where stretches or around 6 or 7% will give larger reading differences on the meter, and thus more accurate measurement of variations.

Roll Pressure Control. A different sort of control is a comparatively recent development designed to allow variation in squeeze roll weights, as well as make the squeeze rolls much easier to handle. The sketch on this page shows the appearance of the size box and rolls.

A constant pressure, adjustable to any desired amount, is exerted on the squeeze rolls by air motors. A gauge shows the amount of pressure being exerted. A simple turn of a switch lifts the upper squeeze rolls free of the metal rolls, allowing washing or changing of the blanket.

This equipment shows up to the greatest advantage in slasher rooms that have to run a wide variety of goods. Heavy sets require much more weight for dressing off the size than do light sets such as net or leno weaves, simply because there are so many more ends to share the weight of the rolls. It has the additional advantage of requiring only one man to lift the squeeze rolls.

Records. Records are a form of control. In case of troubles in the weave room, an accurate set of slasher records comes in very handy. It is important to the superintendent to be able to locate the source of the trouble. And even if the records are only occasionally referred to, the keeping of the records is a great incentive to the personnel to work carefully to produce more uniform results.

A set of records should be kept regularly by the slasher room overseer or foreman. Size formulas and the constructions on which they are used, temperature in size boxes, temperature and time of cooking in cooking kettles, temperature in storage kettle, and speed of slashers are important factors. Also, records of the life of slasher cloth, friction, cylinder packing, etc., should not be overlooked. A record of the sized and unsized waste, and a record of laps should be kept.

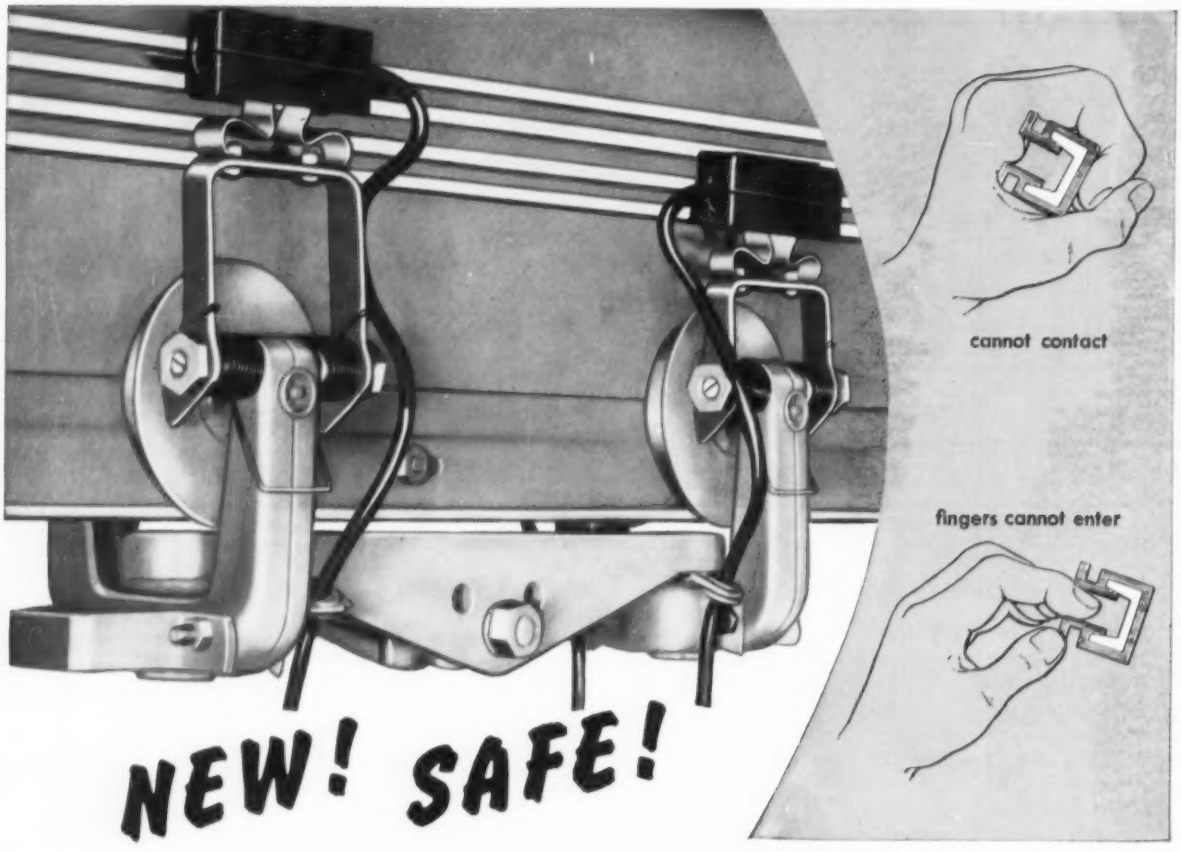
Where it is necessary to have a careful check on weight, a record of the weight of the section and loom beams should be kept. These tests should be checked against periodical desizing tests.

By the use of a carefully kept set of records, the foreman should be able to control his operations in an intelligent manner.

These records will point to the sources of many different troubles which can occur. Also, by comparing with old records, gradual changes may be noticed, which might otherwise have been overlooked. For instance, a record of laps on the section beams might warn of increasing irregularities on the warper and the trouble could be corrected before it got out of hand.

In conclusion, the operation of the slasher room is a case of using good judgment and common sense. If the foreman can instill in his men the necessity for accuracy and care, uniform results will naturally follow.

(End of series. See footnote p. 119)



AMERICAN MONORAIL

KANT SHOCK

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For Monorail Track and Crane Systems

By covering its standard bus bar electrification with a specially designed polyvinyl chloride extrusion, American MonoRail now furnishes completely safe electrified systems.

This KANT-SHOCK shielding absolutely prevents accidental contact with live bus bars. It is impossible for an adult's finger to enter the shield.

A new type sliding shoe collector provides a floating contact throughout a monorail system regardless of any misalignment due to bent bars or at switch and inter-lock connections.

KANT-SHOCK Electrification positively eliminates all the hazards of open bar conductors — prevents costly accidents — protects employees — reduces insurance rates.

Write for KANT-SHOCK Bulletin KS-1

Member of American Textile Manufacturers Association

For Power Driven Conveyors, Use Landahl Chainless Conveyors

AMERICAN MONORAIL COMPANY

13106 ATHENS AVENUE, CLEVELAND 7, OHIO (IN CANADA—CANADIAN MONORAIL CO., LTD., GALT, ONT.)

Put mill research department on level with others, Heard advises

Northern North Carolina-Virginia Division STA members who attended the

Box loom weaving discussion

Staff report

New officers for the Northern N. C.-Va. division of S.T.A. are (l to r): H. W. Buchanan, Erlanger Mills, Lexington, N. C., chairman; Charles Ward, Highland Cotton Mills, High Point, N. C., assistant secretary; and Howard Barton, Fieldcrest Mills, Spray, N. C., secretary. Not shown is W. M. Kirby, Jr., Wennonah Cotton Mills, Lexington, N. C., vice-chairman.

AN EFFECTIVE research department must be on an equal level with other departments in the mill and should report directly to the mill president, M. Earl Heard, vice-president of West Point Manufacturing Co., told the Northern North Carolina-Virginia Division, Southern Textile Association at the fall meeting in Fieldale, Va.

About 250 mill men heard Mr. Heard speak on the subject of "Research in Textiles." Research is fact-finding by examining operations with the question in mind: How can it be improved? Good management will tell the research department how far to go and in what direction, Mr. Heard continued. Results can't come from hiring personnel and building a structure; results come from a state of mind, he said.

More than 4000 companies operate research laboratories today, and six to eight billion dollars will be spent on research this year, according to Mr. Heard. 500,000 peoples' services will be used to investigate: (1) methods; (2) machines; (3) processes; searching for ways to cut costs and improve products.

It is most difficult to operate effectively, and morale is more important than with any other department in the company. The research department must continually sell itself to the company because of resistance to change, and success depends on the ability and willingness of the rest of the company to apply the results of research, he concluded.

Garland C. Humphries of Wennonah Cotton Mills, Lexington, N. C., led an open forum discussion on box weaving, in which experience using nylon in shuttles in place of fur on colored goods was discussed.

Experience in one mill revealed that the nylon wore fast in the shuttles and did not give such good results in the fabric. In this instance two loops were used—one on each side of the quill; however, on some shuttles two loops were used on one side and one on the other.

The correct letoff was not obtained, according to this speaker. Although more uniform tension was obtained with nylon as compared to bristles, nylon was discontinued in favor of fur, which reportedly gave best results in this application.

In running metallic yarn, it is desirable to put about a quart of water at each loom in which three or four quills of metallic yarn can be soaked at one time. Soaking the quills before putting them in the magazine is most helpful in preventing sloughing off, according to a mill spokesman. Although soaking the metallic yarn reduces the breaking strength slightly, there are fewer breaks in evidence while running the yarn after soaking it in the water in this instance.

It was reported that most mills represented at the forum used 1/64-in. metallic yarn. Some had tried 1/32-in. yarn but it wouldn't wind on quills properly. Most mills reported using the same type of quill for metallic yarns as those used on other yarns. One mill representative indicated that quills with more rings were used for handling metallic yarns.

In another instance a small build was tried on quills but results were not as good as on quills with a full build of metallic yarn.

One mill running rayon tried using size on quills with helpful results in preventing sloughing off but penetration was insufficient to alleviate the difficulty fully.

Synthetic Shuttles. Someone asked for mill experience with shuttles made of synthetic materials as compared to dogwood shuttles. The consensus revealed that several mills had tried the

RIGHT... and proved right... for every frame and fiber... Armstrong Accotex Cots

A change in your spinning equipment, or a switch from natural to synthetic fibers or blends, usually calls for a corresponding adjustment in your roll coverings. But whatever the new setup is, there's an Accotex® Cot compounded and proved right for the job.

These cots are designed to combat such problems as eyebrowing, lap-ups, and yarn irregularities . . . and they'll help you spin stronger, more uniform yarn.

For example, if eyebrowing is a problem on your spinning and roving frames, a change to Accotex NC-762 will probably help to control it. This new roll cover has just the right surface friction to pack the waste well back under the clearers. And its anti-static properties help to reduce waste substantially. Like all other Accotex Cots, NC-762 will give you dependable performance, shift after shift.

In spinning on frames where metal-to-metal contacts have been eliminated, you may be plagued with lap-ups, caused by high static. In this case, one of the new Armstrong anti-static compounds is the remedy—an answer already discovered by hundreds of mills.

When you plan a change in fiber, or in equipment, it's a good idea to call in your Armstrong man early. His special training and practical experience can be of help in choosing the right roll cover for best yarn production in your mill. Armstrong Cork Company, Industrial Division, 6512 Ivy Street, Lancaster, Penna.

For more information about Accotex Roll Covers, and other Armstrong textile supplies, write for the booklet, "Armstrong Textile Supplies." Look to it for help in selection, installation, and maintenance of Armstrong spinning and weave room supplies.

Armstrong ACCOTEX COTS

. . . used wherever performance counts

*THE OLD BOSS DYER SAYS:

Select agents for wetting, dispersing, and leveling in pigmenting to provide a surface of foam in the expansion tank, as protection against rapid or excessive oxidation caused by splashing. Some commonly used agents hold appreciable amounts of oxidized color in the foam, which may cause specky results if the particles are not easily reduced in the dye-bath.

* MORTON MACHINE WORKS, INC., brings you the Old Boss Dyer with a timely tip on dyeing each month.

MORTON also brings you the finest line of dyeing, bleaching and drying equipment available today—THE MORTON SYSTEM.

There's a MORTON SYSTEM installation near you . . . and our best selling point is a trip through a mill presently using MORTON equipment.

May we hear from you?

MORTON MACHINE WORKS, Inc.

COLUMBUS, GEORGIA, U. S. A.

Manufacturers of the MORTON SYSTEM Machinery for Dyeing and Bleaching of:
BEAMS -:- PACKAGES -:- STOCK -:- PIECE -:- TOPS

VALVES — PUMPS — BEAM AND PACKAGE EXTRACTORS AND DRYERS — DYE BEAMS, ALL MAKES AND DESIGNS — DYE TUBES — DYE SPINDLES — TUBE SPACERS — STAINLESS STEEL DYE TUBES — CUSTOM BUILT TANKS TO CUSTOMER'S SPECIFICATIONS

Speakers at the meeting were (l-r): M. Earl Heard, vice-president, West Point Manufacturing Co.; R. H. Tuttle, director of technical services, Fieldcrest Mills; H. W. Whitcomb, president, Fieldcrest Mills; Walter Vincent, superintendent, Dan River Mills.

About 250 mill men attended the meeting at Fieldale, Va. Fieldcrest Mills played host to the group.

synthetic shuttles with excellent results. On 58-inch looms the shuttles had run for more than two years, day and night, without any failures and without showing any appreciable wear in one mill.

It is necessary to use less power on the synthetic shuttles (about one half normal), everyone agreed. Humidity doesn't bother these new shuttles, and they were tried on plain looms, box looms, narrow looms, and wide looms with good results.

One mill man wanted to know if there was any trouble with parts breakage on the looms using the new type shuttles. No one reported breakage of parts on looms using the new type shuttle, and it was generally agreed that there was less breakage because the power on the loom determines the amount of breakage to some extent, and less power is used.

The new type shuttles weigh about two ounces more than others, a mill man stated. The new type shuttles are sized by using sandpaper or crocus cloth, and shuttle dressing is used only when the shuttle needs refinishing because of scratches or other damage.

Cost was reported to be twice that of wood shuttles, and life expectancy is four times that of ordinary shuttles, an experienced mill spokesman said.

Several mills reported experience with laminated picker sticks without conclusive results. These mills are now using plain wood picker sticks with an average life of one year on 40-inch looms.

A problem was related, wherein a mill running Acrilan warps had trouble with thread catcher failing to catch filling on the transfer. This knocks ends out on the filling transfer only. Someone suggested running plain fur in the shuttles and removing a small amount of twist in the yarn to help solve the problem.

Checking Looms. How far do other mills go in checking looms at warp change, one man wanted to know. In one mill, the assistant foreman takes one third of the job (total looms) once every two weeks, and in three shifts the job is covered. These men look for worn spindle leather, bad pickers, worn parts, or anything needing attention. This procedure has been followed for about eight months with good results, the mill man said.

In another mill, a check list is used, and all takedown gears and wear parts are checked. Check cards were found unnecessary to do this, according to the spokesman.

Elected for three-year terms on the executive committee of the Division were: Frank Starling, Proximity Plant, Cone Mills, Greensboro, N. C.; John Houston, Spray Cotton Mills, Spray, N. C.; and Ray O'Steen, Washington Mills, Mayodan, N. C.

When fabrics are made with modern Avisco® rayon or acetate

THIS TAG

FINISHED GOODS

Does it matter to you whose rayon or acetate you use? It definitely *should*. Even when the quality and price of competing fibers are identical, there's a big extra advantage built into Avisco fibers — a sales advantage you can't afford to overlook.

This advantage is the Avisco Integrity Tag, a sales and confidence builder for your customers and your customers' customers. It is the most meaningful tag in the market place today because *it's got the most behind it.*

Just what *is* behind the Avisco Integrity Tag?

The most complete fabric testing program in the industry. An independent laboratory approves or rejects fabrics made with Avisco rayon or acetate yarns. The approved fabric can then bear the appropriate Avisco Integrity Tag when made up into garments or home furnishings.

What do they test for?

For most-wanted qualities—such as strength; shrink-resistance; colorfastness to sun, soaking, atmospheric fumes and washing or dry cleaning.

Where do I come in?

When the mill makes fabrics containing 50% or more Avisco rayon and/or Avisco acetate, and in a qualified construction, the converter, end product manufacturer, retailer and consumer all stand to gain. *Without* the mill's initial co-operation, all of this important sales potential is lost.

CAN MOVE FASTER IN 1958

How can I make sure that my goods will end up in tagged merchandise?

As a selling point, emphasize to your converter customers that you have done your part to make the goods qualify. Acceptable finishing is up to them. Both of you benefit from the increased sales of finished goods at retail.

How else do I benefit from the Integrity Program?

It's in your interest to help sharpen and back up the claims made for the performance of rayon and acetate fabrics. These represent huge volume potential. The Avisco Integrity Tag is the consumer's assurance of performance-tested fabric quality. It's like an extra salesman on products that carry it.

I've seen a lot of national advertising about the Avisco Integrity Tag. Will this continue in 1958?

Definitely! Dozens of pages of full-color magazine advertising will back the Avisco Integrity Tag throughout the year. *Every ad* makes the public more aware of the tag and what it means.

Where can I get a list of fabric standards?

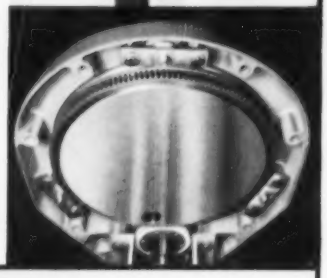
Call LA 4-7200, or write

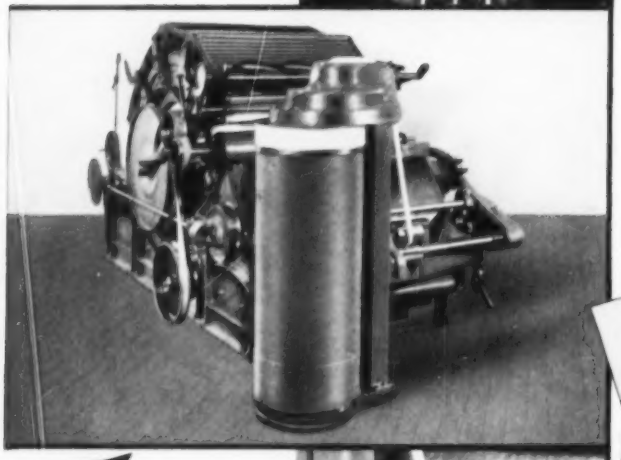
AMERICAN VISCOSE CORPORATION
350 Fifth Ave., New York 1

*NO OTHER COILER HAS THESE ADVANCED DESIGN FEATURES:

1.

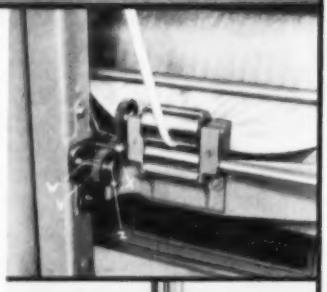
New Coiler Head—Needs no external lubrication, thus eliminating yarn soilage. Calender Rolls are mounted in anti-friction bearings. The Coiler Tube Gear, driven by a nylon pinion, is supported by 3 roller assemblies mounted in anti-friction bearings. Tube gear therefore runs dry, never needs lubrication.





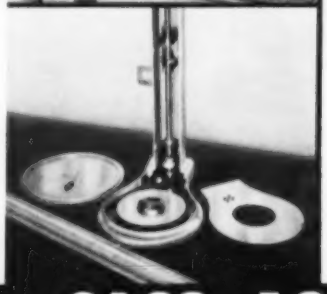
2.

Coiler Drive, with anti-friction bearings throughout, located close to the card calender rolls. Rigidly mounted spur gears, Y, carried in an adjustable bracket on the coiler post, mesh with the bottom calender roll gear X on the card. The drive enters the coiler trunk through cannon shaft Z, carried in adjustable bearing bracket W.



3.

Coiler Base—New type turntable unit makes doffing of large, heavy cans much easier. A raised ring on the turntable engages the inside of the bottom can rim, an improvement over the old method of fitting can inside flange.



Only

SACO-LOWELL has "BIG" COILERS for Carding, Combing and Drawing

FOR CARDS — 12", 14", 15", 16", and 18" diameter cans in both 36" x 42" heights.
FOR COMBERS — 14", 15", 16" diameters in both 36" x 42" height.
FOR DRAWING — changeovers for conventional 18" gauge draw frames to take up to 16" coilers and 16" gauge frames to take up to 15" coilers.
EXCLUSIVE with Saco-Lowell, the Pesitube Coiler for carding wool, synthetics and blends, available in 14" and 15" cans, 36" and 42" high.

REMEMBER —

SACO LOWELL "BIG" COILERS

- **Reduce labor costs as much as 30%***
- **Reduce "piecing up" at drawing up to 50%***
- **Reduce re-workable sliver waste over 50%***

*Based on actual mill tests.

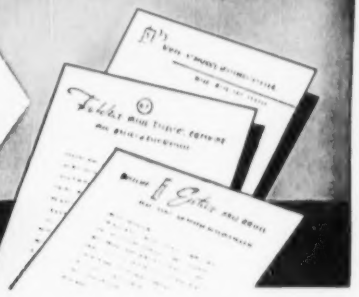
SACO-LOWELL SHOPS

60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD & SACO, MAINE; SANFORD, N.C.; EASLEY, S.C. Sales Offices: CHARLOTTE · GREENSBORO · GREENVILLE · ATLANTA

HOW OTHER MEN MANAGE

• Letters to Editor • Technical Discussion •
• Manufacturing Briefs • Kinks & Short Cuts • Comments from Readers •



Write to the Editors!

Readers are invited to make use of this section for further discussion of published articles, or for discussion of problems arising in the plant. Names will not be used without permission. Payment is made for practical articles or for letters containing manufacturing information.

Address: Editors "Textile Industries," 806 Peachtree St., N. E., Atlanta 8, Ga.

Cites advantages of anti-friction spinning spindles

THE EDITORS:

For some time we have been evaluating a group of 12 spinning frames equipped with ball bearings. The results of those tests have surprised us in several ways, and I am sending you a portion of our findings.

Although there is no appreciable improvement in yarn quality, or in running properties, we remind ourselves occasionally that the roll speed is now 130 rpm instead of the former 124 rpm, and that the twist is softer by five teeth. We get a better fabric face from the softer yarns.

On 40s filling, running on 300-spindle (ball bearing) frames with a spindle speed of 10,500 rpm, we operate with a normal ends-down figure of 55 per thousand spindle hours. Our production is 5.77 pounds per hour per frame compared to 5.50 when the frames were running with conventional spindles. The frames run at 95% efficiency.

The ball bearing spindles are representing a saving also in oil and the time paid for oiling. They also save the production we lost oiling.

On the regular spindles we pumped six frames per week, and we allowed two hours per frame to include pumping, refill, and piecing-up time. Six frames per week at two hours per frame represent a production loss of 12 frame-hours per week. Carried out for 50 weeks per year the practice was costing us the equivalent of 600 frame-hours. That figure is equivalent to stopping 75 frames for eight hours.

With the increase of 0.27 lb per hour per frame, we enjoy a gain of 32.4 lb per frame per week (120 hours x 0.27 lb per hour). On a yearly basis we are gaining 1620 lb per frame. The spindles use approximately 20% less power than do the ones equipped with conventional spindles.

On the basis of what we already have observed, we can expect an increase in yearly production of some 186,000 lb of 40s yarn once we have converted the entire spinning room. This amounts to 2.45 weeks gained in spinning output.

There are other savings, such as

Win $100 REACH FOR THAT IDEA NOW! **Win $100**

Kink Contest Closes December 15, 1957. Send Your Entry Now!

Every kink, short-cut, time-saver, or quality improvement suggestion entered in the contest will be paid for immediately upon acceptance, and the $100 award will be made to the winner as soon as all entries are judged.

The contest rules are simple:

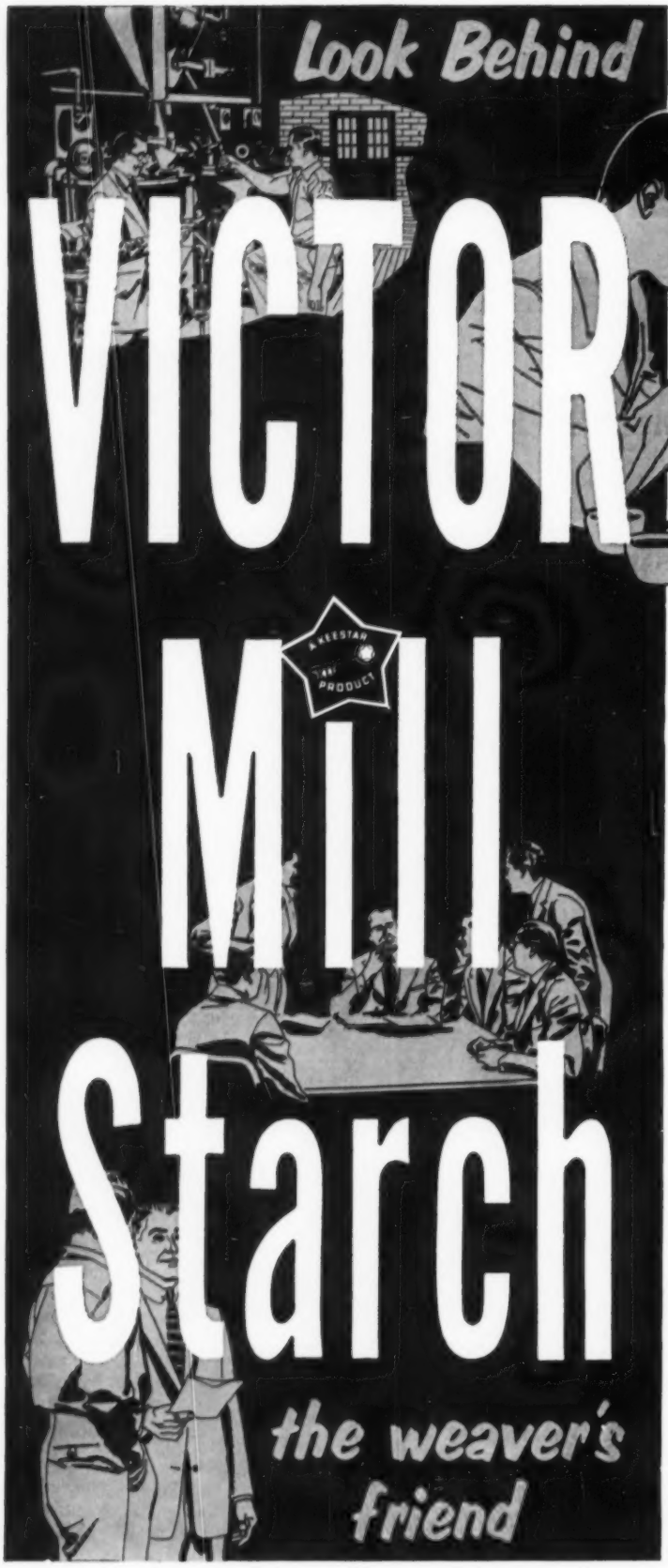
► All contributions must be postmarked not later than midnight, December 15, 1957.

► No limit to the number of entries an individual may submit in any one contest.

► All entries paid for upon acceptance — no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

► Entries must not have been published previously and must not be submitted to any other publication.

Send your contest entry to: The Editors, TEXTILE INDUSTRIES, 806 Peachtree St., N. E., Atlanta 8, Georgia.



Your Problems Are Our Success

Victor Mill Starches are so noted for uniformity, they are a recognized aid to uniform slashing operations. But that alone can't explain the big preference for Victor Mill and other Keestar products.

Keever goes beyond "delivering the goods." Each sales-service man knows the textile industry. He is a trained specialist in mill problems. He consults with you all down the line utilizing the collective experience of nearly 40 associated textile engineers, chemists and technicians.

The success secret of Keestar products lies in the men who make them – and serve you on the job.

THE KEEVER STARCH CO.
General Offices – Columbus, Ohio

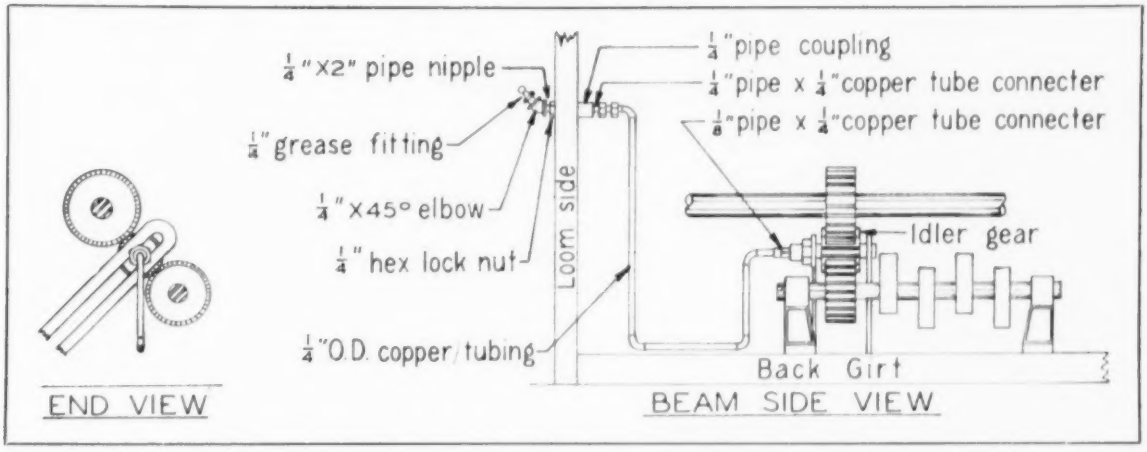
Processors of corn, wheat and blended starches for industry since 1898

Charles C. Switzer, Vice President
TEXTILE SALES DIVISION
1500 S. C. NATIONAL BANK BLDG.
GREENVILLE, SOUTH CAROLINA

those involving indirect help, which I am not prepared to give at the moment; but I should add that the yearly savings also include $1200 in spindle oil which we no longer will need.

CONTRIBUTOR No. 9056
(Canada)

Greasing system for harness motion idler gears



THE EDITORS:

We are using the following system for lubricating the idler gears on our Model E and Model K looms.

We install the system by replacing the pressure fittings in the idler gear studs with ⅛" pipe x ¼" copper tube connector. To these we attach lengths of ¼" copper pipe.

We run the pipe from the union to the frame of the loom just behind the back pick shaft bearing. In a hole in the loom side we insert a ½" pipe coupling just long enough to go through hole. To this we connect the pipe from the idler gear stud. On the outside we place a 45-degree fitting and turn it upright so it can be reached easily. See the illustration for details.

With this system in use the oiler can lubricate five or six looms in the time formerly taken to lubricate one. Also we are able to keep the lubricant from contaminating the cloth.

The initial material cost of the system is low, and the parts used will last indefinitely. We had 320 looms so equipped for six months, and during that period we have had only two to wear out. The pipes will break occasionally unless the under-carriage motions are kept tight.

The system is easily installed; it takes our warp man about 15 minutes to install one when a warp is out.

CONTRIBUTOR No. 9052

More on slasher squeeze roll pressure

The following is another reply to the question asked by Contributor No. 9050 in the October issue of TEXTILE INDUSTRIES, *p. 155.—The Editors.*

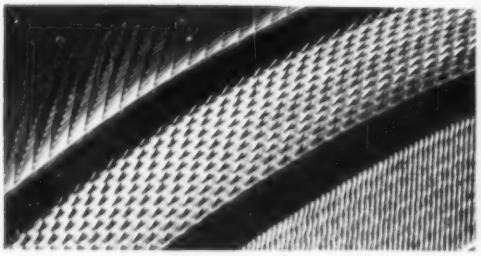
THE EDITORS:

Since Contributor No. 9050 did not specify the style of goods he is slashing, I shall give our slashing procedures, including the roll pressures, and hope that he will be able to use some of the information.

We use thin boiling starch, and cook it at 212 F for a total of 90 minutes. The finished product contains 16 ounces of starch per gallon of size. We store it at 200 F, and keep the size boxes at 206 to 208 F. Our yarns are carded, and we do not exceed 4000 ends per size box.

To date we have had our best results with 450-lb dressing rolls, and 550-lb finishing rolls. For roll covering we use three four-yard blankets on each roll—we never have more than twelve yards, nor less than eight yards on each roll. We feel that stretch on our medium-number yarns should not exceed 1.95%.

CONTRIBUTOR No. 9063



CARDER'S CORNER by Ashworth

CARDERS!! The purpose of this page is to serve as an open forum each month. If you have problems which you would like to throw open for discussion or if you have further comments on problems already presented, write to CARDER'S CORNER, care of Textile Industries, 806 Peachtree Street, N. E., Atlanta 8, Georgia.

Volume 1, Number 12

QUESTION

What is the proper oiling schedule for cards?

ANSWER

First, let us assume that the grease reservoirs at the cylinder, lickerin and doffer bearings have been filled with a soft melting grease that will not dry out too easily. These should be filled level with the top so the lid will close properly and prevent the entrance of lint and trash, after which a hole is pushed through the grease to ensure that oil reaches the shafts.

If the lickerin bearings, cylinder bearings and shafts are smooth and in good condition, five drops of good oil every eight hours will be plenty, until the grease is melted and the reservoirs need refilling.

Where ball or anti-friction bearings are used, and this includes those in comb boxes, it is best to refer to the oil chart provided by the manufacturer.

Doffer bearings need to be oiled once a week except, of course, when the doffer is being ground.

All slow revolving parts are adequately oiled with three drops of good oil every eight hours when the mill is running three shifts. Three drops every eight hours should be sufficient for the tube gears and tube gear plates. More than this could discolor the sliver.

Pulverized molders black lead, dusted into the links and bushings with a two inch paint brush while the card is being ground, will not only lubricate the chain links, but also will permit the flats to move more freely on the flexible bends. The flats should be turned with the hand crank while this is being done.

ASHWORTH BROS., INC.
American Card Clothing Co. (Woolen Division)
Fall River*†‡ Philadelphia*†‡ Atlanta†‡
Greenville*†‡ Charlotte†‡ Dallas†‡ (Textile Supply Co.)
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PRODUCTS AND SERVICES

Clothing for Cotton, Wool, Worsted, Silk, Synthetic Fibre and Asbestos cards and for All Types of Napping Machinery. Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Topflats Reclothed. Flats remilled. Flexible bends reground.

Ashworth PIONEERS IN CARD CLOTHING

3 FACTORIES • • • 6 REPAIR SHOPS • • • 7 SALES OFFICES

One way to move machinery

EDITOR TEXTILE INDUSTRIES:

There are always times in the knitting room when certain objects will have to be slid to different places. Among such objects are step ladders which are kept handy for getting at stop motions. Now and then it is necessary to slide a knitting or other machine a short distance (such as from one alley to an adjacent one). Sliding such equipment will often mar the floor finish.

We have found that a simple and fast way of making such objects slide easily and without damage to the floors is to attach a piece of fleece-lined fabric to each leg and allow the feet of the object to rest on the cloth. The fabric is secured to prevent its coming loose in the movement; and the fleece provides adequate slippage.

On such objects as step ladders it often is advisable to attach the cloth permanently to the ladder feet with tacks.

CONTRIBUTOR NO. 9019

Pick up filings the easy way

THE EDITORS:

A tip for electricians: Keep a bar magnet in the tool pouch for cleaning out hard-to-reach places such as junction boxes, or any other places where bits of stray metal are objectionable.

CONTRIBUTOR NO. 9059

Blackboard is weave room aid

THE EDITORS:

For the information, not only of management, the superintendent, overseers, and secondhands, but also for the loom fixers, weavers, and other operatives on each shift, one leading mill has recently installed a large blackboard in the weave room.

This blackboard is laid out as in the illustration and is prominently displayed.

Entries are made daily, except for some items that are entered as they occur. It is the responsibility of the second hand of the shift involved to keep this board always posted up to date.

This blackboard has proven to be a valuable tool for providing management and supervision with constant information regarding the progress of the department. It also serves as an incentive to the workers on each shift to maintain high production with a minimum of downtime and seconds.

At the end of each week a copy of the completed blackboard is made and filed for future reference. All entries are then erased and the board made ready for the ensuing week.

This idea might well be adopted by other departments of the mill for the same purposes.

CONTRIBUTOR NO. 9058

WEAVE ROOM PERFORMANCE

	MON			TUES			WED			THURS			FRI			SAT			
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	REMARKS
NO. LOOMS WEAVING																			
PICKS WOVEN																			
% EFFICIENCY																			
LOOMS WAITING FOR WARPS																			
LOOMS WAITING FOR FILLING																			
LOOMS WAITING - NO WEAVER																			
LOOMS WAITING - OTHER CAUSES																			
TOTAL DOWNTIME																			
SMASHES																			
PICKOUTS																			
BREAKDOWNS																			
% SECONDS																			

Let-back aid for XD looms

THE EDITORS:

Here is a kink which is especially handy on low-pick styles being woven on XD looms. On a 10-pick fabric with 150/4/2 glass fiber filling, a broken pick looks like a bad thin place; and on a 10-pick fabric of 150/1/0 glass fiber filling, a broken pick is serious.

Under these conditions, even if the pick gear lets back on a gear let-off beam, it is difficult to let it get back far enough on XD looms. Also, if a thin place develops because of bad filling or sloughing on glass filling, it is then necessary to turn the warp back.

When the weaver lets the beam

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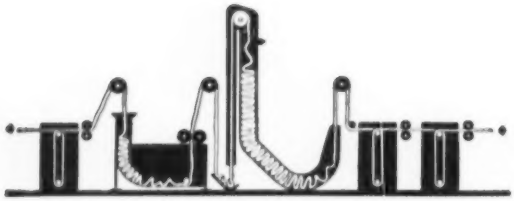

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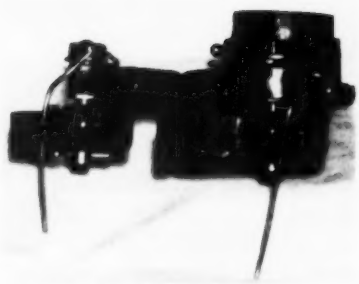


XD take-up dogs fitted with springs.

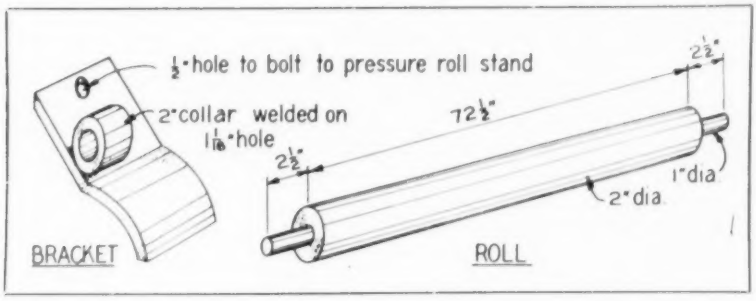
back he squats between the loom ends, and holds both take-up pawl dogs back with one hand while he winds the gear back. Then he turns the beam back while still holding the dogs back. This procedure gets his hands dirty, and he must wash before he takes the pick out and sets up the loom.

To avoid such difficulties I bent some temple cutter springs to fit over the take-up dogs. The weaver, with one finger, puts them over the back of the take-up pawls to hold them away from the gears. With these out of the way he can work at letting back the pick gear and turning the warp beam at the same time. And he does not get his hands dirty.

When finished with letting back, he puts the springs on the other side of the take-up dogs where they rest until needed.

CONTRIBUTOR No. 9054

If beat-up is a problem, try this



THE EDITORS:

Our problem was one of beat-up on W-3 looms. We were weaving a 36-pick fabric, eight harness satin, using 150/4/2 glass yarn in both warp and filling; and on our looms the fabric had a long way to go from the reed to the sand roll. We could not use tin or too-heavy take up roll covering because of the danger of marking the satin.

We put an extra steel roll on the front of the loom as shown in the photograph, and threaded the cloth over it and down behind the sand roll. This brought the cloth to the sand roll "quicker" and gave it a much better hold because it decreased the distance between the fell of the cloth and the take-up roll. We then were able to run the fabric with a minimum of trouble.

The bracket to hold the second roll was bent at the bottom to compensate for the ridge in the press roll stand to which it was bolted. We might have taken off the press roll stands and cut this ridge off, but this would have weakened the stand. When the extra roll bracket was bolted on with a ½" bolt these ridges made it easier to true up, and as the cloth had a tendency to pull it toward the loom frame, the roll turned quite easily and gave us no trouble.

CONTRIBUTOR No. 9062

Needed—thumb screws

THE EDITORS:

On some types of knitting machines the holders on the spindles of the yarn tables must be taken off or adjusted to a different position for running yarn such as nylon and rayon. Due to the slotted screws that are involved, the knitter often has to hunt for a screwdriver with which to make the change.

Thumb screws fitted into those places save a great amount of time, depending on the frequency of such changes, and effort on the part of the knitter. The thumb screw can even be made of the slotted screws by welding a cut washer of the proper size into the screw slots.

The washers should be of convenient size to permit easy turning of the screws, and of a thickness to fit snugly into the slots. The washers are stood on edge in the slots and welded or brazed into place.

CONTRIBUTOR No. 9011

Straighten lap sticks

THE EDITORS:

Crooked lap pins running at the cards will cause laps to break back when the laps run down to a small diameter. The breakage will cause the card tender to make excessive lap waste.

To prevent this condition I have found that, whenever practicable, a ½" hole can be bored through a column or post in the picker room. This will enable the picker operator to put the pin through the

hole and straighten the pin without any extra cost to the plant. At the same time the practice prevents recurrence of the lap breakage.

CONTRIBUTOR No. 9009

Weaving metallic yarns

(Here are two additional replies to Contributor No. 9043. See TI for September, 1957, p. 225.—The Editors.)

THE EDITORS:

We solved the problem posed by CONTRIBUTOR No. 9043 after experimenting with regular quilling methods without success—the following could be some help.

When winding from an unrolling supply (bobbins) an attachment frequently used on the Universal Winding machine No. 90 is one for applying paraffin to the yarn as it is wound.

The paraffin-disc should turn with the tension holder. In other words, the yarn runs between the beveled metal disc and the paraffin disc, and picks up a small amount of paraffin. We also had good results running the end first over a wooden roll covered with wax (before it passed through the compensator guide) ring down to the wooden quill (bobbin) ready for the loom.

The tension should be around 40 grams with a traverse 1¾" long, 7 wind. Maintain a diameter on the quills of 31/32".

No conditioning is to be done on metallic yarn before or after quilling, and all material is quilled using the right wind.

The shuttle has fur on both sides for a distance of about 2" along the small end of the quill. There is no furring down on the rest of the quill. The grain of the fur is applied running with the yarn as it is being delivered.

The above method is for, let's say, 1/64s yarn running about 9500 yd per lb with rayon or nylon binder, left twist.

Now as most yarn today is put up on cones, it is very difficult to get the yarn to lie flat in the fabric, as some twist will show in the quilling operation overhead. We would have to have no-twist yarn and put in first about ½ to ¾ turn left twist, and then the quilling operation would take the twist out again.

When running yarn from a package over end, twist is added in the amount of the reciprocal of the circumference of the package. The same applies when yarn is wound onto a filling quill clockwise: still more twist is added, as the yarn is removed from the quill during weaving (also in the amount of one over the circumference of the quill). The yarn on a standard quill therefore I would say should have about ½ turn per inch.

For flat metallic yarn used on a Whitin-Schweiter quiller, there is a spool adapter which allows unwinding of yarns off spools. The yarn runs from the spool through a fixed eye and through an eye on a pivoted bracket.

When the spindle stops, the bracket drops and an arm engages in a brake on the spool spindle to stop the spool and prevent overruns and breaks on the bobbin transfer.

Many years ago we used on high-class fabrics a thread dressing machine for our warp stock. At the time mostly gold or silver Laminette, imported from France was used.

CONTRIBUTOR No. 9064

THE EDITORS:

The weaving of metallic yarns in both warp and filling so that they will lie perfectly flat in the fabric can be accomplished through the following techniques:

1. In warping or when the yarn is fed directly into the loom from some kind of a yarn rack or creel, the spool should be unrolled rather than taking the yarn over end. Unrolling permits tensionless running and most important, prevents the ribbon-shaped yarn from twisting on itself through an over end takeoff.

This is about the only significant technique required to keep the yarn flat in the fabric. The weaving operation itself tends to keep the warp yarn flat. Further details for warping metallic yarns are

available upon request from our technical service department.

2. In the filling, very little has been done (in this country) in keeping the yarns flat. Generally, the yarn width used in this country ranges from 1/128" through 1/100", 1/80", 1/64", 1/50", and 1/32". All of these yarns are commonly used for filling with the 1/64" being the most prominent.

It has not generally been found objectionable for some twist to build up in the yarn as it unwinds from the quill. However, should your reader desire to prevent this, he might look to a practice which is commonly used abroad. This involves the insertion of a slight amount of twist before quilling. The exact nature of the weaving operation, that is the shuttle and quill size, will determine to some extent what degree of twist should be put in.

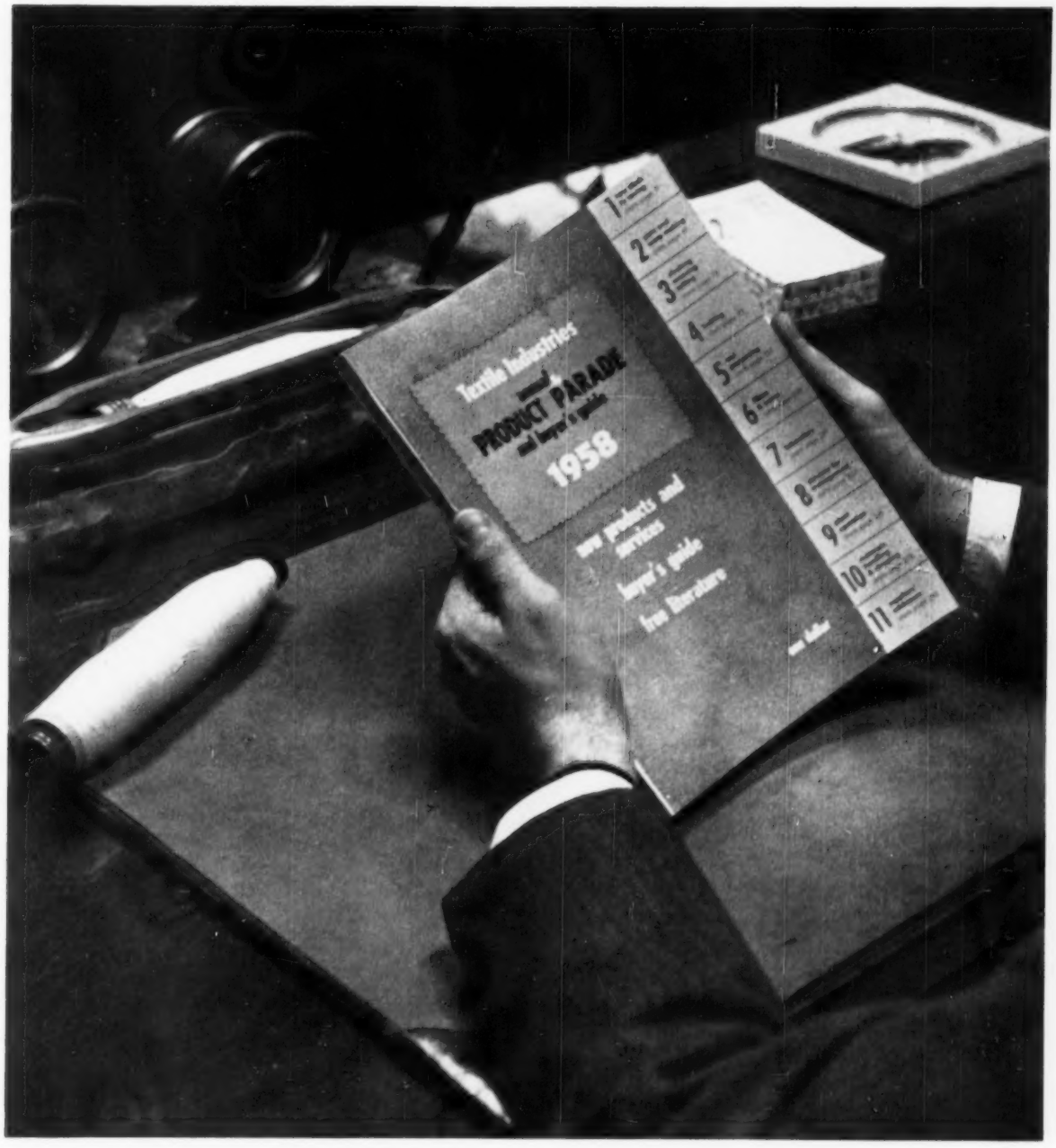
Of course, the inserted twist should be opposite in direction to that which the quill take-off inserts during weaving so that the twist inserted in the yarn before quilling will be removed by the action of weaving.

It might be a good average twist to have ¾ to 1½ turns put into the yarn before quilling. The method of inserting this twist can be on a regular 5-B machine or some other twisting unit.

When this is done, care must be taken to provide tension-free unrolling from the spools, rather than taking the yarn over end at any stage of the twisting operation. Another very interesting method for inserting the slight amount of twist before weaving, is actually done on the quilling frame.

This is accomplished by a device which might be described as a rotating arm of about 3" in length with a yarn guide at its end. The yarn being unrolled from the spool is threaded through this rotating arm before it travels to the quill. The arm rotates inserting twist at the pre-determined turns per inch.

LEON E. SEIDEL
The Dobeckmun Co.



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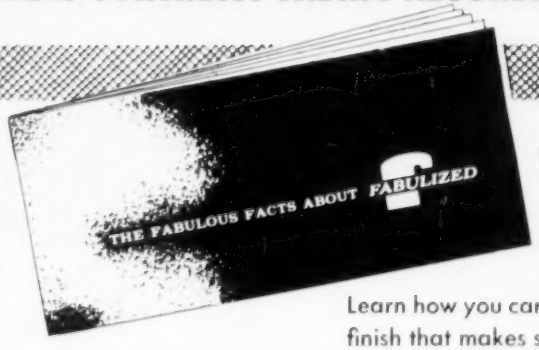

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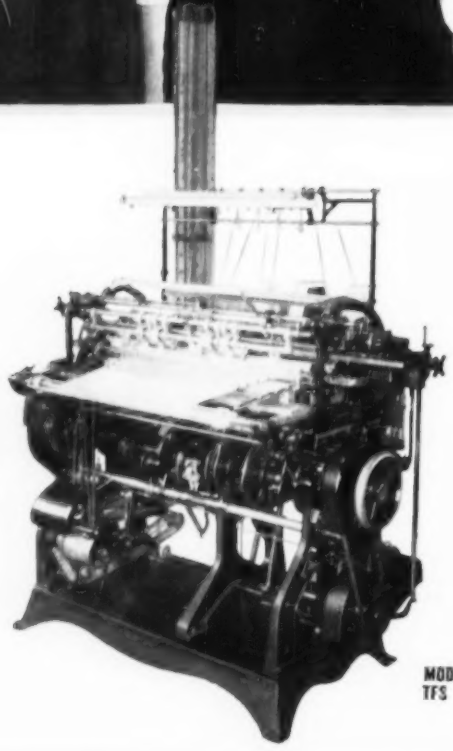

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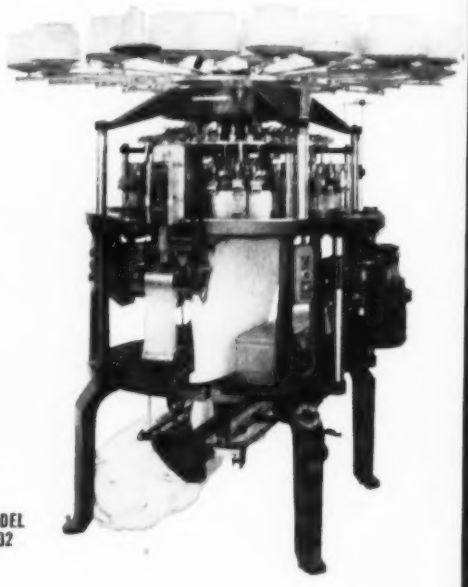

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Formulations, based on either Direct Acetate or Basic dye classes, are checked and adjusted in the laboratory under simulated plant dyeing conditions, after dyestuffs have been carefully screened and selected.

How Color-Knit dyes Orlon MATCH-MATES

Dyeing Orlon sweaters to match wool skirting material is an exacting job; Color-Knit does it with a combination of practical know-how and efficient dye-house layout

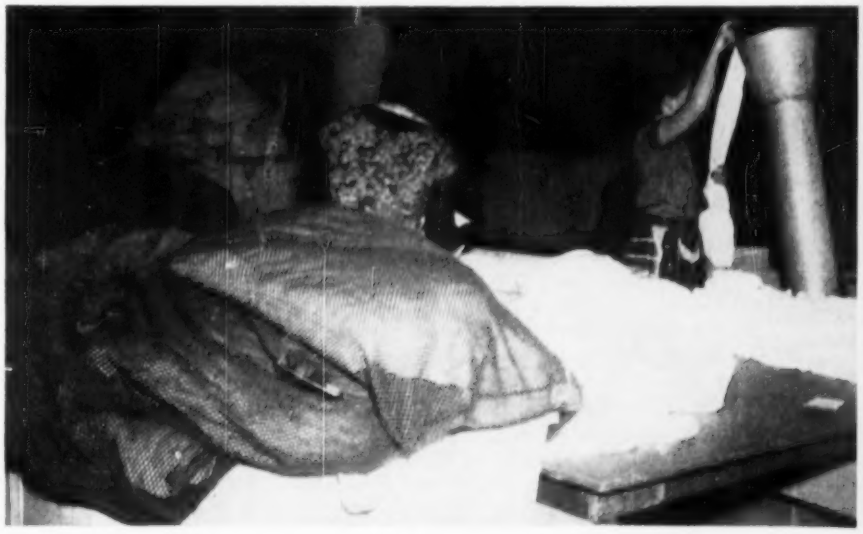
Staff prepared Exclusive

ALTHOUGH fibers and fiber modifications now being produced are more readily dyeable than they were a year or two ago, and developments in dyeing technology have tended to make the dyeing operation easier, the overall function of management and the day-to-day role of the dyer are still vital factors in production dyeing. For even though the dyeing operation is carried out along scientific lines, conditions can readily change during the dyeing cycle to require skill and experience of a very practical kind.

The synthetic dyeing plant that intends to stay abreast of technological progress and hopes to cope successfully with changing problems will have within its organization the essential technical know-how; and in addition to a most effective lay-out of its dyeing equipment, will place the essential tools and physical controls at the dyer's disposal.

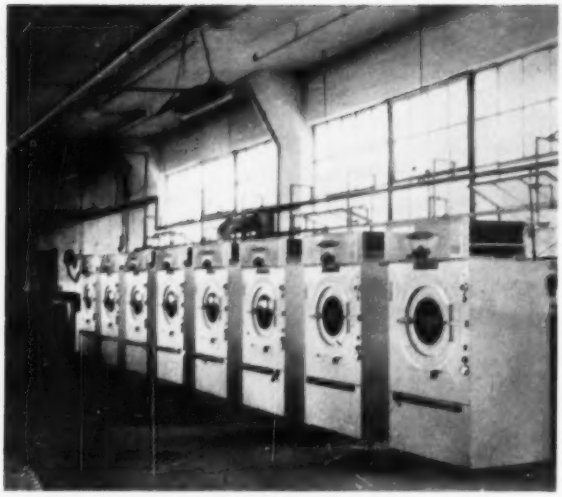
Such is the management philosophy of the Color-Knit Dyeing Corp., Elizabeth, N. J., dyers of synthetic knit goods: textured nylon (Ban-Lon, Tycora, and the like) and Orlon, in cut-and-sewn and full-fashioned sweater form. One of the more exacting dyeing operations at Color-Knit, which demands a combination of technical and practical know-how, is the dyeing of Orlon "match-mates," in which Orlon is dyed to match the shade of a wool skirting material.

AT FIRST GLANCE, this operation appears to present no appreci-



A customer's shipment, in this case in cut-and-sewn form, is bagged and properly tagged before going to the dyehouse.

Operator pulls out sample bag in last stages of dyeing cycle. Cooling after dyeing is gradual, followed by bath with cationic agent.



Sweaters are dried in tumble dryers under careful control; deep shades are dried at 200-220 F, medium and light shades at 200 F.

able problems. For one thing, the new merge of Orlon, of improved whiteness, is more readily dyeable, with great affinity for the Basic class of dyes, resulting in a shorter dyeing cycle and a simpler dyeing operation. But the most important requirement of "match-mate" apparel is that the shade of the Orlon sweater must closely follow the so-called "light swing" of the dyed wool skirt when both are worn together under natural and artificial lighting conditions, in daylight, incandescent, and fluorescent lighting. Thus dyes and combinations of dyes must be carefully selected to meet this important requirement and others that are commonly called for as well.

Whereas Orlon can be dyed with only two color classes—Direct Acetate and Basic—with approximately 30 dyes in all to choose from, the wool fiber can be dyed with four major dye groups, with a vastly larger number of dyes to choose from, offering infinite shade possibilities. This tends to further complicate shade formulation and dyeing, for each wool dye has its own peculiar "light swing." Two wool reds belonging to the same color class, for example, may be exact matches in daylight; but under fluorescent lighting, one may become a bluish-red and the other a yellowish-red.

At Color-Knit, a definite procedure has been established for each incoming new shade. It begins with a review of existing formulations, which usually results in the selection of a nucleus of dyes that along with others, perhaps, will approximate the "light swing" of the wool skirting material.

Meanwhile, consideration is also given to the dyeing properties of the selected dyes. These include exhaustion rate and levelness; solubility and dispersibility; sensitivity to pH, or stability; performance at boiling temperatures; affinity of the dye for Orlon, or degree of exhaustion; and economics of the formulation. In dye selection, consideration is also given to fastness properties; namely, fastness to light, ability to withstand the #2 AATCC Wash Test; fastness to wet and dry crocking, in deep shades particularly; and finally, fastness to perspiration.

Following the selection of dyestuffs and determination of quantities that make up each formulation, laboratory dyeings are carried out, in which plant dyeing conditions are simulated as closely as possible. The formulation that produces the nearest match is adopted and then adjusted to the machine in which the customer's lot is to be dyed.

Where there is evidence that a formulation might prove tricky or troublesome in machine dyeing, a 15-lb batch is dyed on a sample machine under more practical conditions, with close observation of dyeing behavior. The resultant shade is then examined and, if necessary, the formulation is again adjusted.

SKILL and experience are of great value in adjusting formulations to machine dyeing; especially when Basic dyes are used. For dyes of this class have a decided tendency to "jump" on the fiber. Thus the danger of dye additions in the late stages of the dyeing cycle is at once evident, for it can produce uneven dyeing if not skillfully carried out.

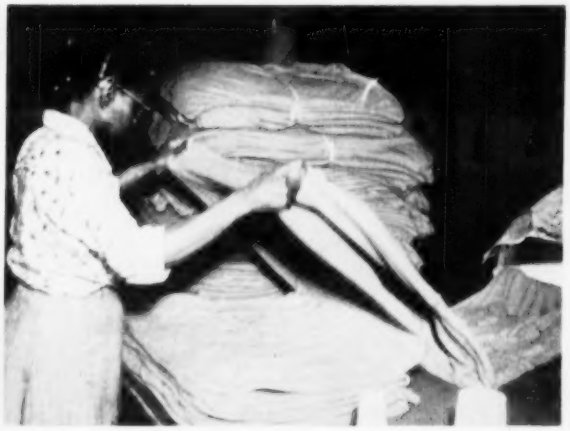
Essentially, the translation of beaker formulations to production dyeing requires adjustment for liquor ratio; adjustment to size of lot; and adjustment to the change in intensity of temperature rise that is decidedly more severe in the machine, where live steam is used. Skillful translation of beaker formulations will not only keep dye additions to a minimum but will also keep time of dyeing within prescribed dyeing time limit.

The Basic dye formulation consists essentially of the following:

Retarding agent
Acid
Salt
Leveling agent
Buffer
Dye(s)

After the machine has been loaded with the bagged material and the dyebath prepared, the

Ample space permits orderly routing of goods; bagged goods in background are on way to dyehouse; goods in foreground await inspection.



Operator inspects goods for evenness of dyeing, cleanliness, creases, hand, and size before they are packed for shipment to customer.

temperature is allowed to rise gradually at a predetermined rate to promote levelness and uniformity of dyeing throughout the load. As dyeing proceeds under supervision, swatches of material are taken at regular intervals to determine if dyeing is on schedule. When heavy shades are dyed, quantities of dyes required are added in several portions at proper intervals.

The normal dyeing cycle, including such additions as are necessary to obtain correct shade, is about four hours. This may be somewhat less when dyeing lighter shades.

When dyeing is complete, the temperature is decreased gradually, for Orlon has no resistance to "shock"—that is to say, a sudden drop in temperature would permanently "set" creases and folds in the material. A mild creasing condition can be removed by drying at a high temperature; but a heavy creasing condition is eliminated with greater difficulty and not always with complete success. As a preventive measure, Color-Knit has equipped each dyeing machine with a valve arrangement and a layout of perforated water lines that enable the dyer to adjust the rate of cold water input, making possible gradual and uniform cooling of the load.

Upon rinsing, the load is allowed to drain uniformly and the finishing operation is begun with the preparation of a fresh bath. The basic finishing formulation is built around a cationic agent which has affinity for the Orlon fiber and makes possible virtually any type of hand—from a harsh hand, as is sometimes called for in men's sweaters, to a luxuriant, soft, cashmere-like hand. The amount of cationic agent used varies with the type hand required—increasing amounts producing increased softness.

Finishing is carried out at a temperature of 110-130 F for about 20 minutes, and, after rinsing, the goods are extracted.

BASIC DYES are usually used for heavier shades, while the Direct Acetates are used, with some exceptions, for light and medium shades. Direct Acetate dyeing does not require quite the exact attention to detail, such as gradual rise in temperature, and its formulation is a simple one, consisting essentially of dye(s) and dispersing agent.

Dyes are still selected similarly to the Basics, however, and the same consideration given to the "light swing" requirement. The normal dyeing cycle is of about three hours duration.

Following extraction, the goods are taken out of the bags and carefully loaded into tumble dryers. The drying operation is not a routine one, in the sense that it requires careful control. The temperature must be raised gradually, a sufficient time allowed for drying and a minimum period for cooling allowed. The entire drying cycle requires about 25 minutes.

In general, drying temperatures depend on dye shade: Deep shades are dried at 200-220 F; medium and light shades at 200 F; and whites at lower temperatures, 190-195 F, to prevent yellowing.

Before the goods are packed for shipment, they are inspected for the following:

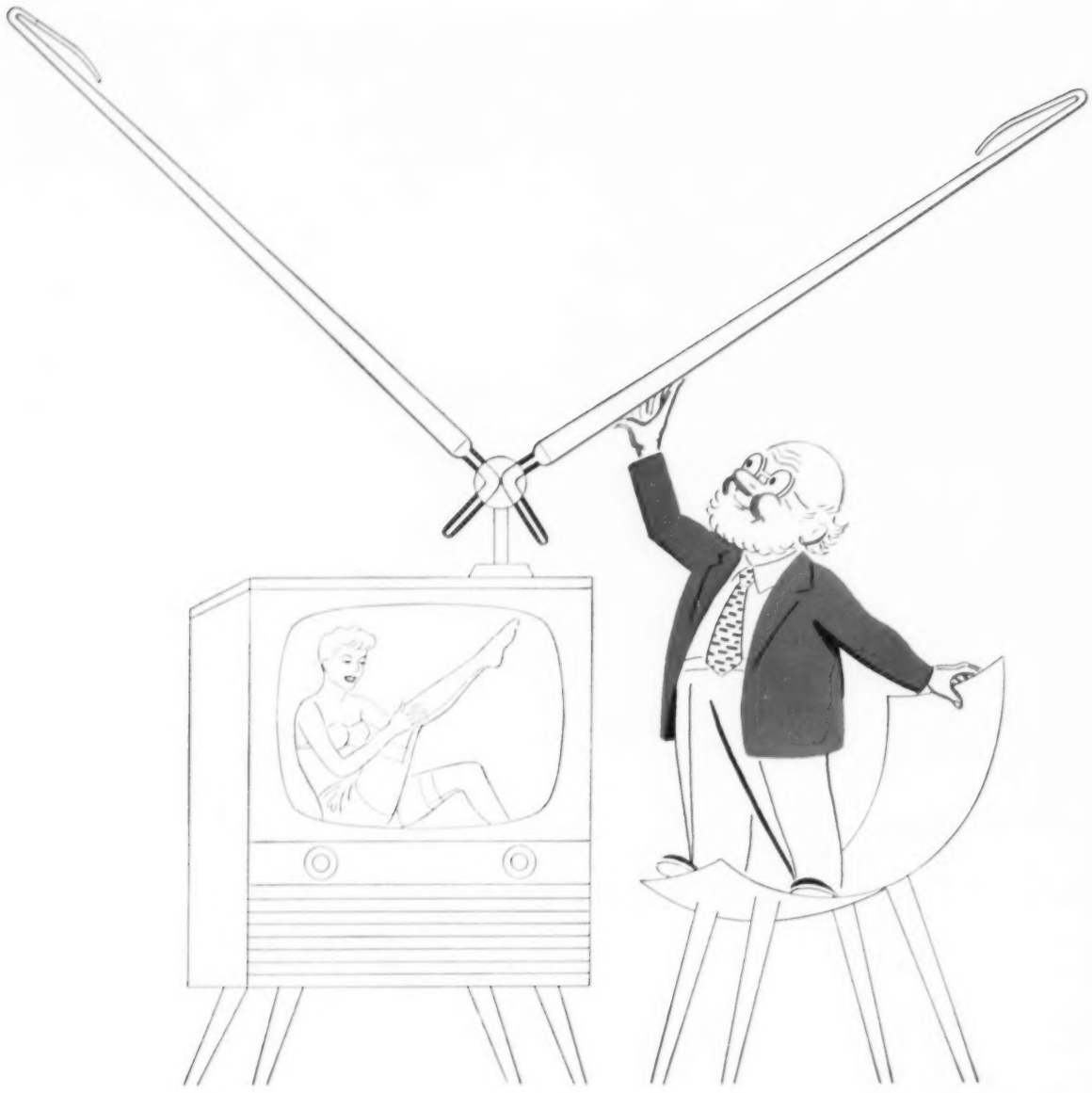
1. Evenness of dyeing—sleeves and sweater bodies must be of exact shade.
2. Cleanliness of material.
3. Creases—these will appear darker in shade.
4. Hand.
5. Size.

A reminder to Knitting Section readers

In addition to the articles in this section, which are prepared especially for you, each regular issue of TEXTILE INDUSTRIES contains other exclusive features that should prove helpful in your daily work—articles on plant management, including industrial and public relations; merchandising; dyeing, bleaching, and finishing; quality control, etc.

So we urge you to look through all of the feature pages of every issue, plus the Executive Section (News in Brief, etc.), How Other Men Manage, and New Equipment Parade.

THE EDITORS



Strong and Straight

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Improved rubber feeder for Komets

provides better yarn control, reduces parts wear

by K. O. Metz

Exclusive

A NUMBER of rubber feeding attachments have been designed and built by hosiery machine manufacturers for their machines; and a great many similar devices have been made by individuals in mills across the nation for many different types of machines. Quite a number of the original devices are still in use—many have been resting in the scrap pile for a long time.

The important feature of any rubber feeding or furnishing device is control of stretch in the rubber top—and uniform, controlled feeding of the rubber yarn. The rubber top must be knit to a certain standard in relaxed width, and stretch a given number of inches without breaking the rubber—and maintain these standards within set tolerances from day to day.

This cannot be accomplished by pulling rubber off a cone as one does knitting yarn. Rubber yarns must be fed to the needles under accurately controlled conditions.

Even today goods are being made which look good lying on a counter, but which lack sufficient stretch to permit pulling the sock top over the wearer's foot and heel without bursting a number of strands of rubber.

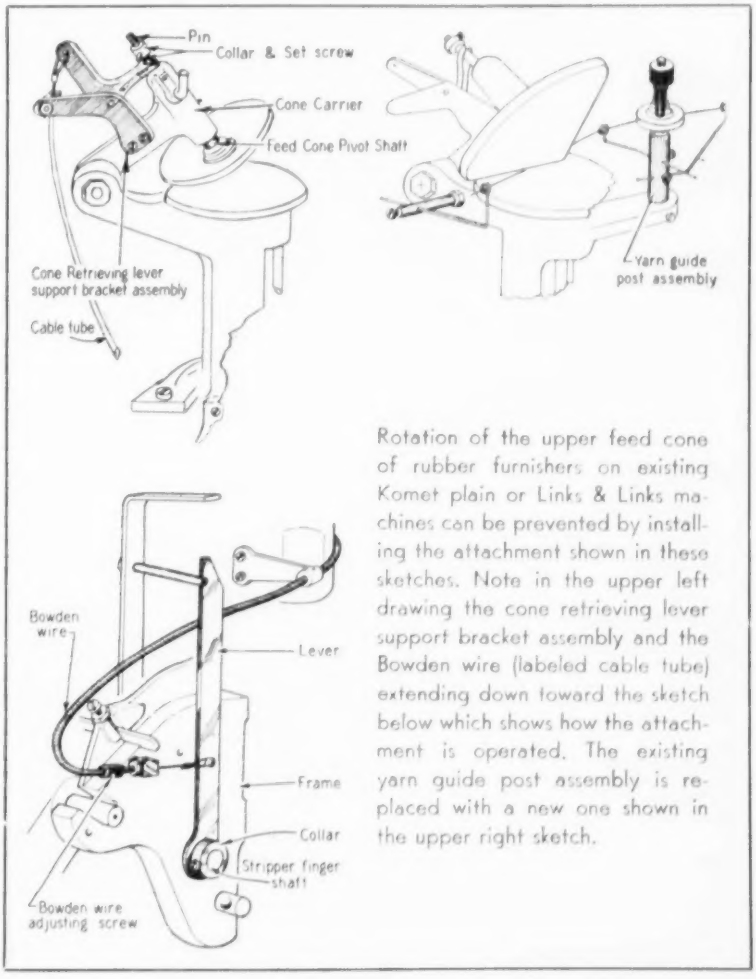
When rubber bursts in a genuine rib top, the purchaser still has a good top on his socks. But when rubber bursts on any type of non-rib top the wearer has nothing left but a sleazy piece of tubing which looks like anything but a good sock top.

The rubber furnisher available now for the Scott & Williams Komet and Links and Links machines permits the upper feed cone to be raised to prevent its turning when it is not in use. Since the cones are not in contact with each other except during the actual knitting cycle, wear on those parts is reduced to a minimum.

Also as part of the improvement the upper cone is lifted out of action by a movement of the feeder mechanism rather than from some other motion of the machine. This permits accurate timing of the cones so that the rubber is under control from the first course in the welt until the top is completed.

With the old device it is difficult at all times to knit a clean makeup and welt, due to rubber looping out between needles.

Present equipment can be brought up to date at relatively low cost. Refer to the accompanying drawings to see the motions which must be replaced or changed in making the installation.



Rotation of the upper feed cone of rubber furnishers on existing Komet plain or Links & Links machines can be prevented by installing the attachment shown in these sketches. Note in the upper left drawing the cone retrieving lever support bracket assembly and the Bowden wire (labeled cable tube) extending down toward the sketch below which shows how the attachment is operated. The existing yarn guide post assembly is replaced with a new one shown in the upper right sketch.

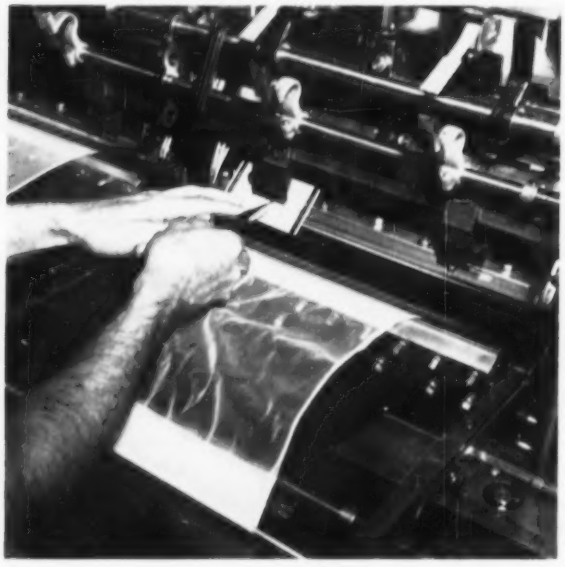
How to avoid narrowing

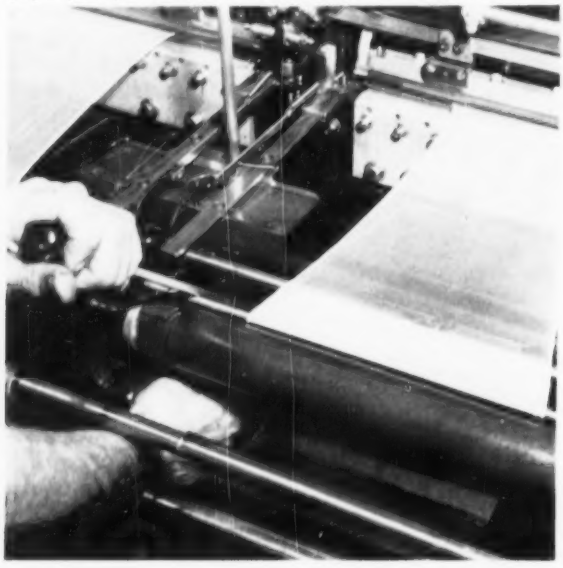
by William D. Frye

Exclusive

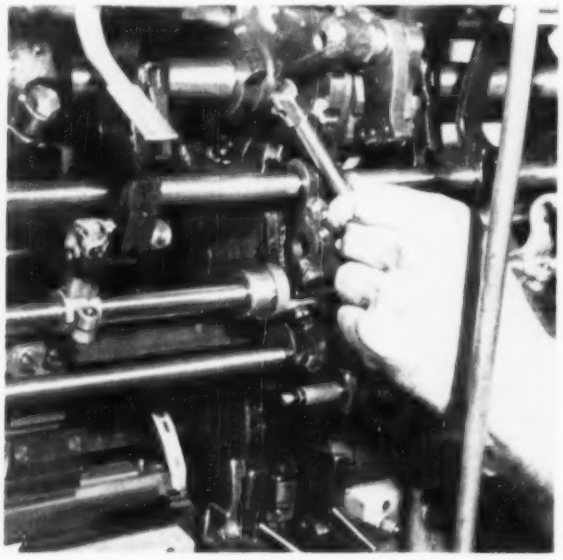
NARROWING trouble in full-fashioned hosiery knitting is a difficulty that all mills have to some extent. Knitters and fixers sometimes remark that a certain type of machine cannot be held to gauge, or that a specific machine is old and will not run in gauge. This

Narrowing points and needles should be carefully spaced and lined. Grooves in the points should be kept clean, and sinkers and knock-over bits straight. Check the narrowing motion with a screwdriver (right photo) for assurance that there is no lateral motion.





Check the spindle nut (below left) for play by pulling the narrowing points into the sinkers and putting pressure first on the left, then right, to observe the movement. Check the racking of the narrowing points (below right); worn plungers must be replaced.



troubles on F-F machines

is the kind of thinking the mill manager should correct because any knitting machine will run in gauge if it is properly fixed.

When a fixer has narrowing trouble on a machine, he should first see that the knitter checks his needles and narrowing points. Fixers often overlook a case where the problem is damaged needles, or needles and points that are out of line and space.

The knitter should keep the grooves in the points clean, and the points and needles spaced and in line. Also, the sinkers and knockover bits must be straight so that the points can pass without rubbing. From here it is the fixer's responsibility to see that the machine is properly gauged according to the machine manufacturer's manual.

First, the spacing collars on the needle bar shaft should be checked to see that there is no side movement of the needle bar in the narrowing motion.

Next, the spindle nut should be checked for play, and this can be checked by pulling the narrowing points into the sinkers and putting pressure on the left and then the right narrowing fingers and observing to see if there is any movement.

Check the racking of the narrowing points. The plunger must seat itself into the groove in the lock dial. A worn plunger should be replaced and adjustments made to get the correct amount of kick. Each narrowing finger should be set correctly (centered) between the sinkers. Check the narrowing rod for height and correct distance from the table. Set the narrowing fingers with the proper gauge.

In some extreme cases it may be necessary to revert to basic setting. Such instances may include needle bar press settings (No. 2 B gauge on Lieberknecht) and needle bar height. These should be set according to the erector's manual, because each depends on the make of machine involved.

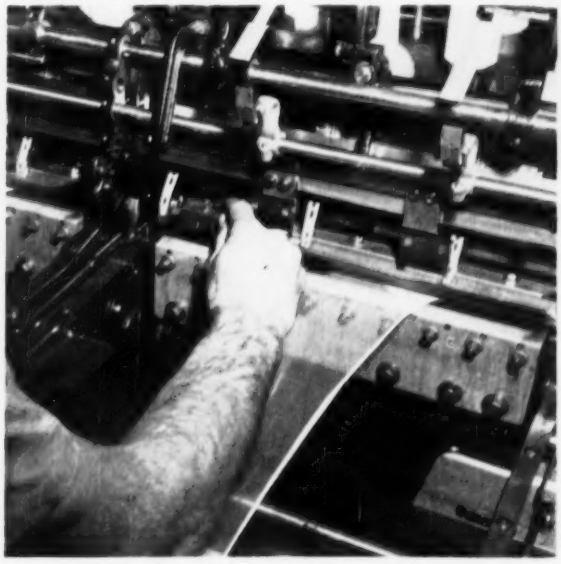
In some instances where the trouble is localized on one section, the fixer may find a needle bar with side play. On late model machines with the micro needle bar adjustment this is merely a matter of tightening the nuts on the hinge.

On older models use this procedure: Take spring off lay-out lever. Using down and outward pressure with the thumb on top of needle bar on left side, loosen hinge screws and tap hinge gently to the right; then tighten screws. Use the same procedure on right side, tapping hinge to the left; then replace the spring. A knockover bar with side movement may cause a narrowing hole.

Although all of these comments pertain to accepted procedure which most machine fixers know, sometimes a little review and reminder will help the knitters and fixers make a better place in which to work.

Check the narrowing rod (below left) for height and correct distance from the table. The gauges for both operations are shown.

Check needle height (below right) with gauge to determine accurate setting.



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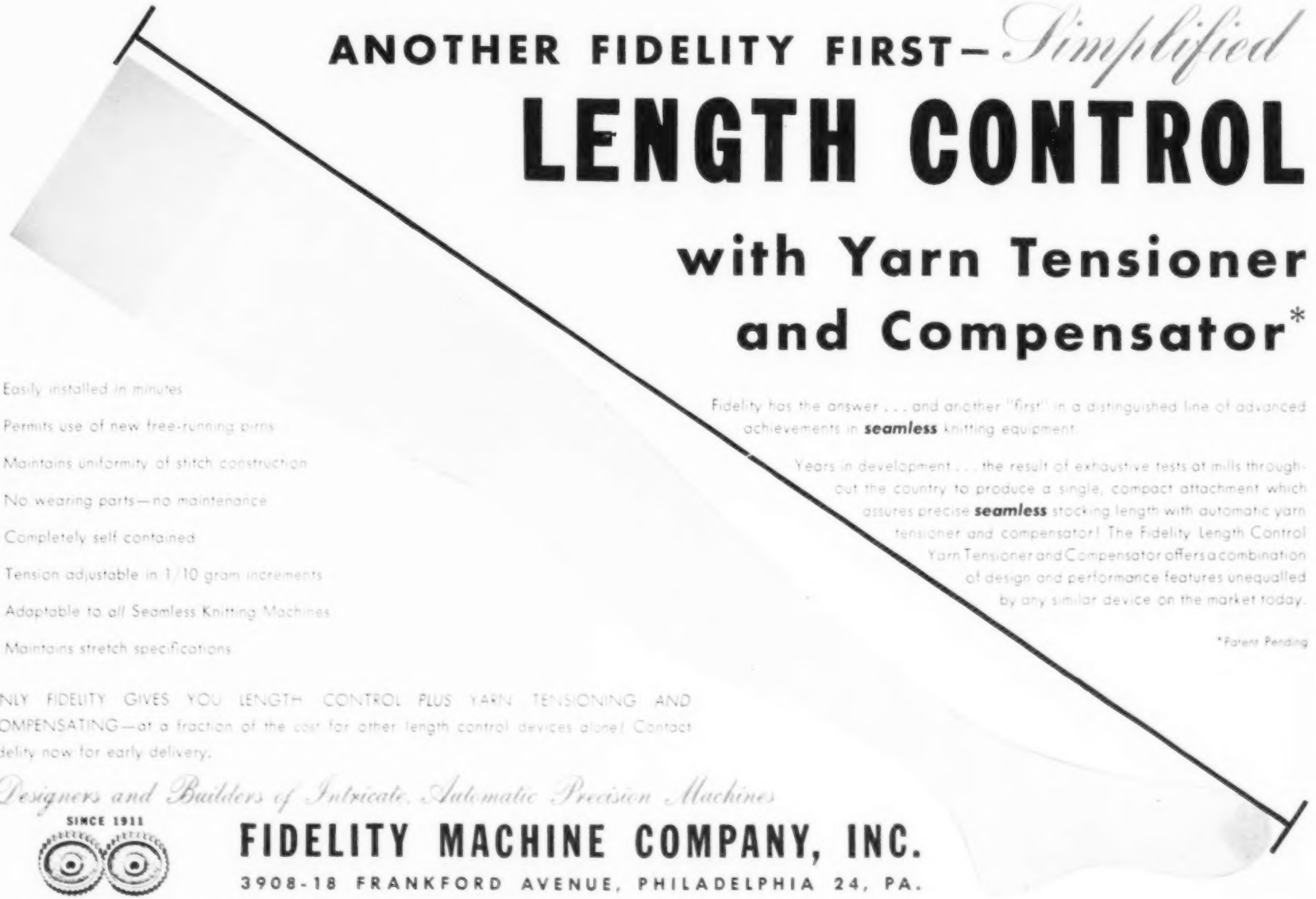

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TEXTILE INDUSTRIES for December, 1957

For further information use Handy Return Card, Page 179

156

One of Our Most Important Services It Costs You Nothing!

Next to quality yarns and quality colors, color and yarn consultation can be one of the most important services we offer — even though it costs you nothing.

We can save you the embarrassment of selecting a shade which is unobtainable with the type of dyestuff you need, from the costly error of using dyestuffs that will bleach out, run, crock or fade rapidly, or from using yarns that may be good for some purposes, but not for yours.

On the other hand, we can recommend dyestuffs and yarns that are ideal for your purposes and that will make your fabrics more salable.

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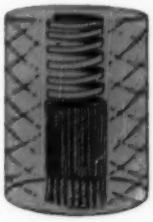
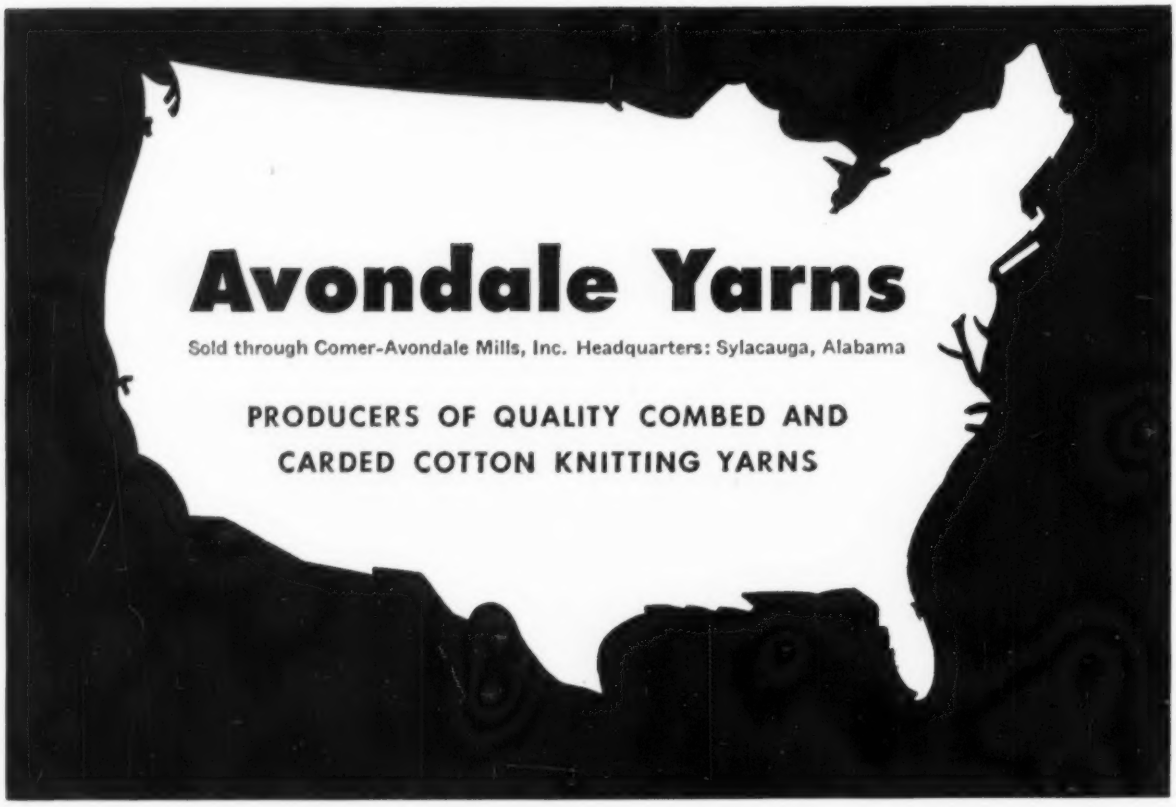


X-ray view of Franklin Package — the "secret" of uniform shades. Don't say "package dyed". Say "Franklin Process Dyed".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Genius is nothing more than knowing the use of tools, but there must be tools for it to use. A man who has spent all his life in one room will give a poor account of what is contained in the next.

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What consumers think of stretch socks — results of a survey

■ OPPORTUNITIES for continued sales success with stretch socks appear very satisfactory, according to a new consumer study in three major retail areas.

The survey, conducted by the Marketing Research Section of Du Pont's Textile Fibers Department, showed that nearly all the men questioned have worn stretch hose and that more than half of them will continue to choose stretch hose over the nonstretch type.

The Du Pont name was not mentioned during the interviews which were conducted in New York City, Chicago, and Dallas, the company stated. The questionnaire was designed to emphasize both stretch and nonstretch types equally.

51 per cent of those asked said they intend to buy stretch socks again. Another 7 per cent said they will buy either the stretch or nonstretch types. 41 per cent said they intend to buy only the nonstretch types.

Indicating how firmly stretch socks are established is the fact that while 47 per cent of the respondents were looking for stretch socks when they last went to the store to buy, 52 per cent actually purchased them.

Results of the survey show that a majority are more favorably inclined toward nylon in men's socks than any other fiber. Half of the respondents purchased nylon socks the last time they bought, and 50 per cent indicated their next pair would be of nylon.

A breakdown showing the fiber preference of stretch hose buyers versus nonstretch hose buyers shows that 74 per cent of those who bought stretch socks bought nylon and about the same percentage expect to buy nylon again. Only 18 per cent of the nonstretch buyers said they bought nylon, but 24 per cent plan to buy nylon socks the next time, though not necessarily in stretch styles.

The main reasons respondents gave for favoring stretch socks were good fit, durability, and appearance. Washability and comfort were also mentioned. Tightness and nonabsorbency were the chief complaints. However, the survey hinted that in many cases unfavorable comments resulted from customers being misled by poor quality merchandise. This substantiates Du Pont's belief that it is important to achieve and maintain quality in the stretch sock market, the Marketing Research Section said.

Merchandising idea

Knitting mill in department store window

■ EVER SEE a knitting mill operating in a department store window?

"Sidewalk superintendents" in Philadelphia, Pa., have. They were able to watch sweaters being made —from knitting to the finished garment—right in the main 8th and Market St. window of Lit Brothers department store, by personnel of Shelley Knitting Mills, Inc., on the mill's own equipment.

John Ashe, president of Shelley, working with Lit's merchandising manager and a buyer in discussing a joint promotion program, decided that for his new line of Temi sweaters the consumer should be brought directly into the picture.

Consequently, beginning on Monday, October 7, and continuing for a period of 10 days, these sweaters were actually produced right in Lit's window.

Working in the window (see accompanying illustration) were a Jacquard-type circular knitting machine, a sewing machine, and looper. Each machine was in actual operation.

According to the announcement, the action window marks the first time that sweaters have been produced in a store window anywhere in the U. S. The display, replete with photos of the Shelley plant, an exhibit on dyeing by Keystone Dyeing Co., and one by Joseph Bancroft & Sons showing how "Ban-Lon" is produced, was used to help back a promotion of the new sweaters for women in the ladies' blouse department at Lit Brothers.

Sh-h-h-h-h-h-h-h.

JACOBS

TIGER PAW VIBRATION PADS

Fiberglas & Vinyl — the Modern Way

Reduces Vibration over 90%

Vacuum Suction Cups Really Hold

Not Affected by Oils, Greases, or Floor Finishes

Made for any Size or Weight of Machine

More Economical than any other type Vibration Pads

In Stock — Prompt Delivery!

No messy adhesives are necessary — just put proper size pads under machine and start up — if machine needs re-location, just pick up pads and re-use.

SAMPLES ON REQUEST

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SOUTHERN DIVISION
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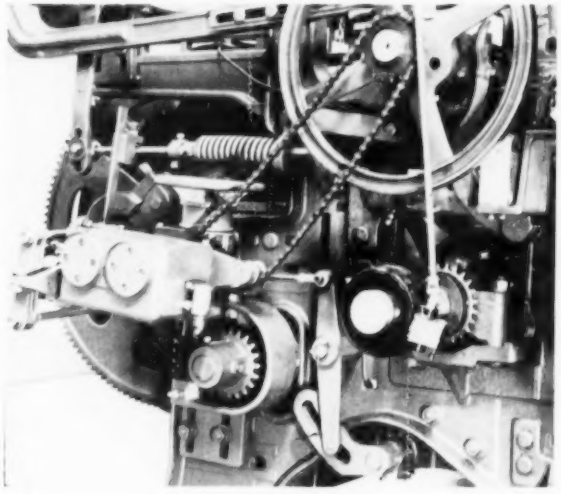
NORTHERN DIVISION
Danielson, Conn.

NEW EQUIPMENT PARADE

Machines and Equipment . . . Supplies and Services . . . Dyes and Chemicals . . . Books

Please note: Claims made in all of these announcements of new developments are of necessity based upon information furnished by the respective suppliers.—The Editors.



Let-off gives smooth warp delivery

The Tru-Tension Let-Off is designed to give a constant rate of yarn delivery to the loom while maintaining constant tension on the warp yarns.

To accomplish this, the Tru-Tension Let-Off has been provided with a positive and continuous drive, and a compensating friction transmission (or drive-adjusting device) to provide automatic control of let-off speed and yarn tension from full to empty beam.

The let-off is driven by means of sprockets and a roller chain from the crank shaft. Changing the number of teeth in either or both of the driving sprockets provides a wide pick range; for example, by changing sprockets, a pick range of from 17 to 106 picks per inch can be obtained with a 26" beam; from 17 to 125 picks per inch with a 22" beam.

Constant warp yarn tension and delivery to the loom is accomplished by means of a sensitive friction disk transmission interposed between the sprocket drive and the yarn beam. Control over this friction disk transmission from full to empty beam is effected by means of a conventional beam follower and linkage which gradually accelerates the let-off as the warp is run off.

To keep a predetermined, constant tension on the warp yarns, the let-off is further equipped with a micro-adjustment. This consists of a linkage arrangement between the whip roll and the frictional disk transmission. When the warp sheet becomes slack, the whip roll rises, and its motion is transmitted to the friction disks of the transmission to decelerate the let-off speed. A whip roll depressed by a tight warp will act automatically, through this linkage, to increase the speed of delivery of yarns.

A hand wheel permits disengaging of the transmission and manual adjustment of the yarn beam when necessary. An adjusting knob provides for setting proper tension on yarn at the beginning of a new warp after which the let-off should automatically control tension, within a few grams, until the warp has run out.

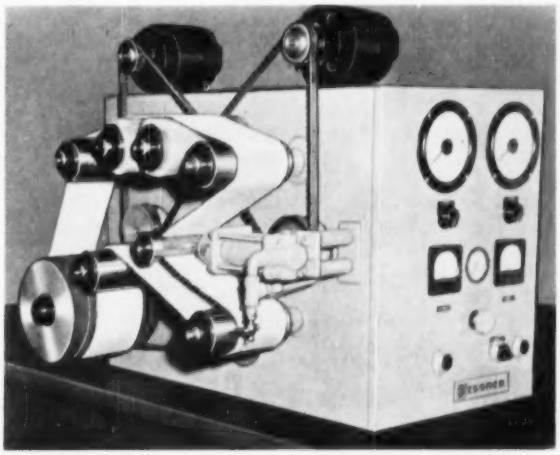
The let-off has proven to be particularly useful on synthetics and fine cottons, and in eliminating wavy cloth on critical weaves.

All revolving elements incorporate anti-friction bearings. All gears have cut teeth, and the disks of the frictional transmission run in an oil bath. The attachment is designed for long life with minimum maintenance requirements, and is now available for X-2, XD, and XP model looms.

On looms presently having the #4 Automatic Bartlett Let-Off, the new Tru-Tension Let-Off may be applied directly, using the old worm wheel shaft housing. For looms equipped with other let-offs, a new worm wheel shaft housing will be required.

Draper Corp., Hopedale, Mass.

Do you want more data? Write ◆ or use card on page 179; list M-101



"Watch charm" napper gives authentic results

A napping laboratory in the form of a "desk top," test napping machine has been made available to mills for research and fabric development. The product simulates, in results, the effects obtained on a Hi-Torc napper. It permits the study of differences in napping effect on fabrics made of various raw materials, on fabric design, and on fabrics treated with such chemicals as softeners, dyestuffs, etc.

Dial settings are accurate, and indicate the amount of napping power being used, the relative speed between the

pile roll and the cloth, the relative speed between the counterpile roll and the cloth, the amount of cloth tension, and the number of napping runs required to produce the desired napping effect.

From quickly interchangeable worker rolls, desired specifications of wire clothing—size, setting, and sharpness—can be immediately determined.

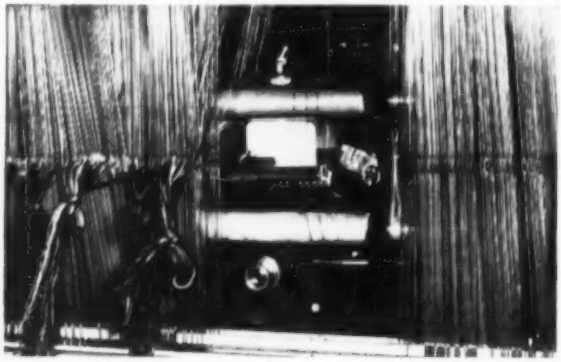
David Gessner Co., Worcester, Mass.

Do you want more data? Write ☁ or use card on page 179; list N-102

Machine "hands" ends to person drawing in

The W.I.R.A. Model 2 Reaching-in Machine will handle nylon, rayon, silk, and similar continuous filament yarns, and will replace the second person who selects the ends and hands them to the person actually doing the warp drawing in.

The machine consists primarily of a frame for mounting the warp, gears, and the traveling carriage or selector



unit. End selection is made by a single finger unit from an "end and end" lease which is located by special lease bars. These selected ends are then transferred by the selector finger to a storage magazine awaiting the attention of the person drawing the ends in. The speed of the machine is automatically that of the one drawing in the ends.

The machine is available in warp widths of 50", 72", 100", and 120". Made to handle harnesses up to 24 in number; the unit may be ordered for either left or right direction of drawing in.

Electrical Production (Leeds) Ltd., Hope Rd., Mabgate, Leeds 9, England.

Do you want more data? Write ☁ or use card on page 179; list N-103

Speeds the rubberizing of knit goods

A German-made machine (see TI for November 1957, p. 228 for picture) eliminates several hand operations in the manufacture of knit foundation wear. The 60-foot machine, attended by one operator, performs finishing and drying operations on the knit goods in a matter of minutes. Previously drying was a 24-hour job, with the material being hung on long racks in the drying room and air circulated around it with fans.

The machine will handle fabrics from 4 inches to 54 inches wide up to 25 feet a minute, and can be set to fold materials in truckload quantities or in small piles for immediate cutting. Fabrics of both natural and man-made fibers can be dried and finished.

In the drying process, the fabric passes over rollers, through three drying chambers and out on to the automatic folder. The feeding apparatus is equipped with a special device which makes possible the equalization of skewed or distorted threads.

The fabric moves through the drying chambers suspended between two currents of mixed air-and-steam. Moisture is drawn from the chambers by fans. The air-and-steam drying process prevents stretching, which is essential to the making of a high quality elastic fabric that maintains its "bounce" in the finished girdle. Port holes in the 60-foot sides make possible continuous check on the drying fabric, and thermostatic controls permit adjustment for correct temperature for each type of fabric processed.

Trockentechnik Kurt Brukner KG, Stuttgart, Germany.

Do you want more data? Write ☁ or use card on page 179; list N-104

Steams cloth in half the floor space

The Rotomatic retains cloth in open width in a steam atmosphere and replaces conventional conveyor equipment used for this process. Requiring only half the floor space and costing approximately half as much as conventional equipment, the machine will store cloth free from rub marks. The cloth remains undisturbed until withdrawn at the delivery side, which is performed without drag.

Cook Machinery Co., Inc., P. O. Box 397, Nashua, N. H.

Do you want more data? Write ☁ or use card on page 179; list N-105

Six-thread underwear sewing machine

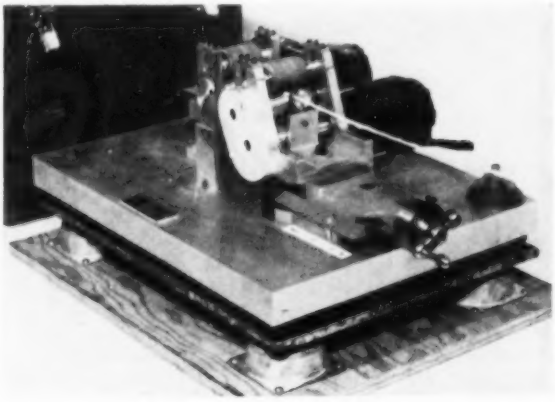
The Mauser flat lock sewing machine for the underwear trade uses six threads, automatic lubrication, and runs at 3500 rpm. The machine has four needles, one looper thread, and one laying thread. A trimming device on the presser foot works horizontally and cuts off excess thread and material. There are 350 different models for special industrial applications.

National Industrial Machinery Corp., 350 Fifth Ave., New York 1, N. Y.

Do you want more data? Write ☁ or use card on page 179; list N-106

Measures pull necessary to draft fibers

The Model CS-83 Cohesion Tester was designed to measure dynamic forces involved in the drafting of strands of textile fibers such as sliver and roving. Such information is gathered for use in determining proper



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☆ Greater Strength ☆ More Resiliency

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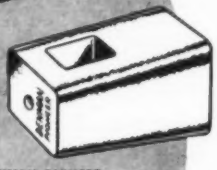

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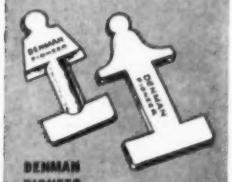
REGULAR PICKER



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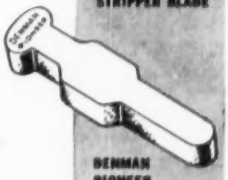

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PIONEER
DOLL PICKER

SAVES PICKER STICK WEAR AND TEAR!... INCREASES LOOM EFFICIENCY!

Denman's Drop Box picker construction eliminates the weak spots in other pickers.

The insertion of the patented wedge provides a strong, smoothly tapered web, completely free from wrinkles. This exclusive feature also eliminates the resin-leak into the picker stick aperture. This leak often forms rough spots in other pickers which abrade and wear the picker stick.

For greater efficiency and economy, for smooth performance, specify precision engineered and crafted original Denman Pioneer Loom Parts, famous for more than twenty years.

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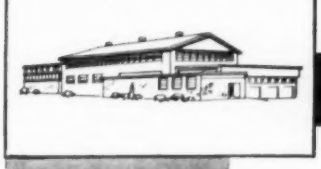

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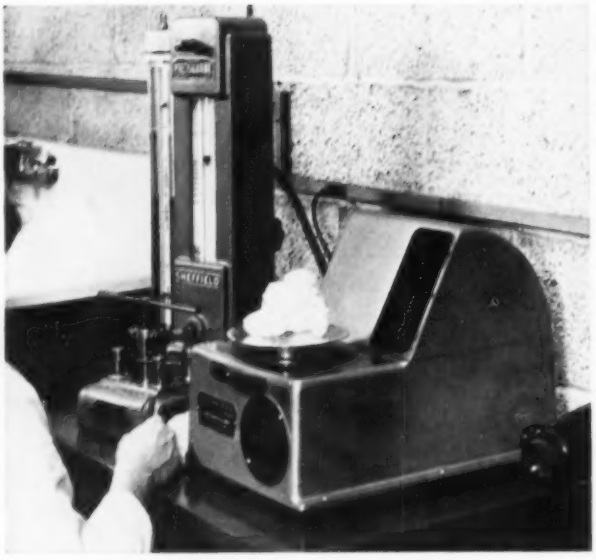

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assures accuracy in MICRONAIRE test

Shadograph Model 4104-A, above, is precision designed for weighing samples in conjunction with the Sheffield Micronaire testing machine. Extreme accuracy, plus greater speed and easy-to-read shadoedge indication has made it the choice of cotton shippers, brokers and mills both here and abroad. Indication by a shadow line is projected on an illuminated dial. You avoid the possibility of parallax readings. Friction of indicating mechanism is eliminated. Short lever fall together with hydraulic damping action assures an always fast and accurate weight measurement. Dial is graduated with 1" of indicator travel equal to 15 grains, over and under.

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- MICRONAIRE TEST
- YARN COUNT
- PRESSLEY-FRACTIONATION
- ROVING WEIGHT
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roving twist, evaluating fiber finishes, and evaluating many different fiber characteristics and their relationships to spinning and yarn qualities, and for determining the effect on moisture content of the drafting and for carrying out other basic studies in the drafting of fibers. The tester is manufactured through an agreement with West Point Mfg. Co.

Custom Scientific Instruments, Inc., 541 Devon St., Kearny, N. J.

Do you want more data? Write ◆ or use card on page 179; list N-107

Roving waste opener protects staple

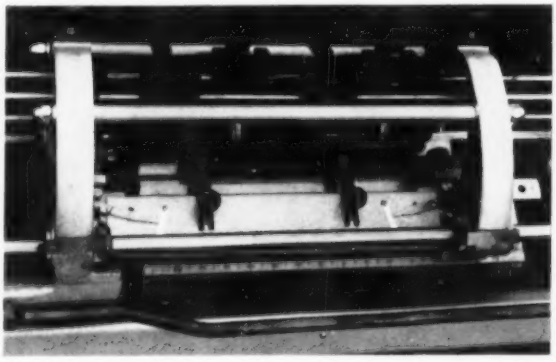
A roving waste opener, designed for the reclamation of roving and card room waste, and to achieve the highest practical degree of fiber separation, employs a progressive method of fiber separation to maintain the highest staple length. Equally suitable for staple fibers, the machine contains two independent and adjustable transfer stations to insure modulated opening—variable opening ratios between the two transfer stations to provide the necessary degree of negative draft.

Tomlinsons (Rochdale) Ltd., Soho Works, Rochdale, England.

Do you want more data? Write ◆ or use card on page 179; list N-108

High speed rib trimming machine

A specialized narrow rib trimming machine, Model MPG, is designed for high speed production. Built with 11" needle beds in cuts from 5 to 16 needles per inch, it uses an individual cam system for each of the



four rib strips it will produce simultaneously. The rib strips, up to 1¾" width each, are individually selvaged. The machine is a non-Jacquard type.

Made by Servo Stop Co., Roanne, France, the machine has a pattern scope beyond the normal production of rib fabrics, and contains provisions for the inclusion of high and low butt needles in either bed for knit and miss loop construction.

Mac M. Rothkopf & Co., 317 Bushwick Ave., Brooklyn 6, N. Y.

Do you want more data? Write ◆ or use card on page 179; list N-109

Refinements added to false twist machine

The Falspin Mark II false-twist crimping machines described in TI for August, 1957, p. 176, have undergone de-

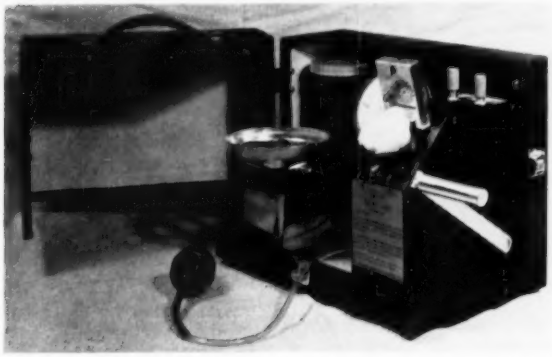
sign improvements. Chief among the changes are: The split groove feed wheel has been abandoned in favor of more accurate motion; yarn control is positive—each unit is a pair of steel rolls, gear driven and grooved to prevent interference between adjacent yarn wraps; and the book-form Ferranti heaters have been designed to seal against heat loss and drafts when closed.

Sydney & E. Scragg, Ltd., Macclesfield, England.

Do you want more data? Write ◆ or use card on page 179; list N-110

Measure fiber finness with more speed

The Model 175 Spinlab Port-Ar retains the reproducibility and portability of the Model 171 Port-Ar, and in addition incorporates design features which increase the convenience and speed of operation. The balance is now constrained in movement and the pan is supported from



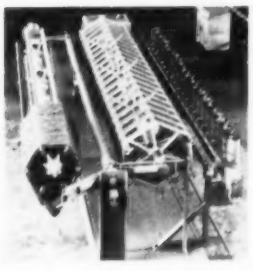
the base. The compression chamber is deeper and the sample is compressed from the bottom. This allows the sample to be self ejecting. The unit is a production instrument that can be used both for volume testing and portage to the point of purchase.

Completely self contained, it weighs only 20 pounds, and may be operated in the laboratory from the motor operated Spinlab Port-Ar Pump. The use of low pressure ambient air makes the Port-Ar relatively independent of humidity and temperature variations.

Special Instruments Laboratory, Inc., 312 West Vine Ave., Knoxville, Tenn.

Do you want more data? Write ◆ or use card on page 179; list N-111

Reeling machine uses two swifts



The space-saving Change Reeling Machine permits more operatives to be used in reeling per unit of floor space. The two swifts are supported by a common turntable bearing bracket, and are alternately moved into the working or doffing positions. Thus one swift is being filled while the other is skeined and doffed. The machine is built by Croon & Lucke GmbH Machinenfabrik Mengen/Wurtt, Germany.

The swift diameter may be changed infinitely through manual or motor controls. Swift speed of the Type 400 machine has a maximum value of 800 rpm, with thread speeds up to 1100 yards per minute.

Optional equipment includes a glass shield to protect operators against the draft from the swifts, and operator's chair consisting of one or two comfortable seats running in a guide rail, a turntable rack for hank storing, and an electrical recorder which charts the working and stopped time.

Stellamcor, Inc., 60 East 42nd St., New York 17, N. Y.

Do you want more data? Write ◆ or use card on page 179; list N-112

Automatic 6 gauge F-F sweater knitter

An automatic six-gauge full-fashioned knitting machine for the manufacture of bulky knit sweaters is available. The machine is built in both a 12-section model with 32" heads, and in a single-section 32" head model for sample making. Both are stripped down and rebuilt hosiery machines.

The coarse gauge units run at a rate of 45 courses per minute, and can knit down to three courses per inch. They can knit either fronts, backs, or sleeves. The machine can be used for heavier gauge yarns which will produce a garment looking much coarser than six gauge if desired.

The units are equipped with special needles, sinkers, points, and removable presser edge. A filler point attachment is also available. The automatic features include: rack setting, take-off, stop motion, safety switches, and an improved coulier motion.

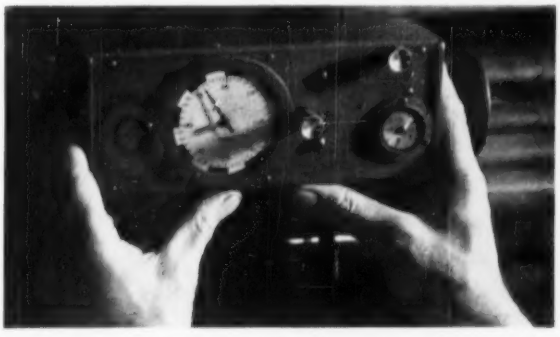
United Knitting Machine Co., Lansdale, Pa.

Do you want more data? Write ◆ or use card on page 179; list N-113

Meter reads drafting roll slip directly

The R.S. Meter is used to measure the differences in surface speeds of drafting rolls and to express the differences as percentages. With it the spinner is able to: (1) establish and maintain the best drafting conditions; (2) determine the best roll setting; and (3) detect roll slip.

The meter can also be used to measure the relative



speeds of two lines of rolls. This feature is valuable when small web drafts or break drafts are to be used.

The meter can be used to compare the surface speed of each top roll, while drafting, with that of the corresponding bottom roller. If there is a difference between the two speeds a colored disk on the instrument rotates and, from the speed and manner of rotation of this disk, the amount and nature of any speed difference can be seen. The presence of slip is indicated by the intermittent rotation of the colored disk. The instrument also indicates

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an advanced sizing agent
for cotton and all
cotton and synthetic warps

Increases strength and
elongation of yarn

Reduces shedding of size

Scours out readily
and will not mildew

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on a dial the percentage speed difference.

Shirley Developments, Ltd., 40 King St. West, Manchester 3, England.

Do you want more data? Write ◆ or use card on page 179; list N-114

Portable model thread trimmer

The portable model Clip-Matic Thread Trimmer contains the operating features and advantages of the table model; however, it requires less space and is mounted on wheels for easy movement. The machine is equipped with mast and spring to permit cleaning of garments on racks or hangers or articles placed on work tables. It can also be used for cleaning threads from piece goods selvages, in conjunction with winding or measuring machines.

Featuring a vacuum control regulator, the unit has stationary holder to clean any type of garment that has to be brushed against it, and it can be used with any electrical outlet.

Cutting Room Appliances Corp., 1134 Broadway, New York 10, New York.

Do you want more data? Write ◆ or use card on page 179; list N-115

Seamless machine features loop control unit

The Booton Model HK knitting machine is made in 3¾-inch diameter with 400, 420, 474 needles and uses conventional as well as high twist stretch yarns to knit both plain and micromesh fabric in ladies' full length hosiery. The machine is motorized and has a slow-down device for yarn changes.

Incorporated is an automatic take-off and fabric control unit which helps to control loops in the welt and throughout the stocking.

A two-feed mechanism operates in welt, leg, and foot. Production time is 10-10½ minutes per stocking, and the two-feed mechanism permits use of yarns of opposite twist in stretch stockings.

Hosiery Machine Corp. of America, 350 Fifth Ave., New York 1, N. Y.

Do you want more data? Write ◆ or use card on page 179; list N-116

Tenter saves 66% in fuel consumption

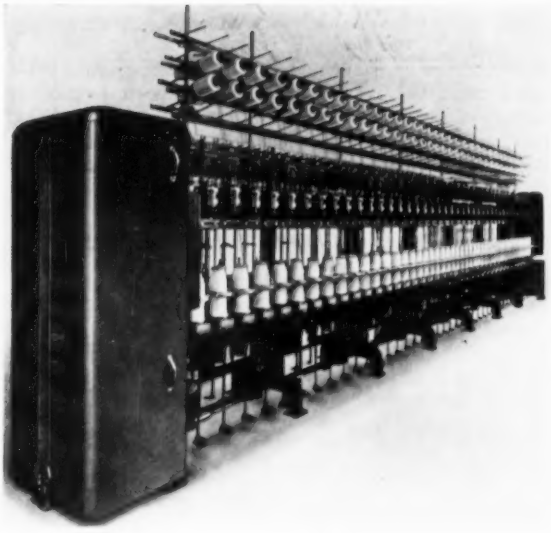
The Tomlinson Tenter Accelerator consists of an up-to-date type of air flow system having high velocity jet cross nozzles which can be installed without any structural modification to an existing tenter. It is supplied either with or without the "Seelheet" insulated enclosure. This means, in effect, that a tenter can be completely modernized.

If the whole range is accelerated an increase of 80% to 100% is possible, or the original output can be maintained with a shortened machine. Little more than one additional pound of steam is required for every additional pound of water evaporated.

This high evaporation efficiency is obtained by repeated re-circulation and re-heating combined with a concentration with impact energy resulting in a high degree of aero-thermo-dynamic efficiency.

Tomlinsons (Rochdale) Ltd., Soho Works, Oldham Rd., Rochdale, Lancs., England

Do you want more data? Write ◆ or use card on page 179; list N-117



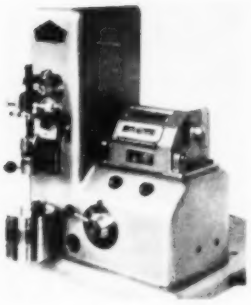
Spans gap between light and heavy twisters

The medium-heavy ring type doubler model CLA (down twister) is equipped with four-inch or five-inch rings, heavy duty spindles mounted in anti-vibration roller bearings, individual and group stop motions, and a builder motion which will make cop, form bottle bobbin, or straight sided packages. The machine has a 12" lift, and is built for high-speed twisting.

Sydney & E. Scragg, Ltd., Macclesfield, England.

Do you want more data? Write ◆ or use card on page 179; list N-118

Tests reverse bending strength



The Karl Frank (made in Germany) Reverse Bending Test Machine, developed for measuring the reverse bending strength of sheet materials (such as cellophane, synthetic film, metal foil, artificial leather, plastic, paper, cardboard, and textiles, as well as wire) is equipped with a continuous variable transmission by means of which bending alternations can be executed at a rate of 110 to 1000 per minute. The adjustment is easily made by means of a calibrated hand wheel on the front of the unit.

The angle of flexure to which the specimen is bent in each direction can be adjusted at will within the range from 0 to 90°. The head in which the precision machined bending knives are mounted is stationary, and the top grip moves arc-wise at a distance of 1 centimeter around the knife edges.

The knife edges are accurately adjustable to the bending line by means of two micrometer screws. These at the same time determine the point on the specimen at which the bend reversal is to occur. In order that specimens of different thickness may be bent exactly on the neutral fiber, the knife-edge head can also be adjusted

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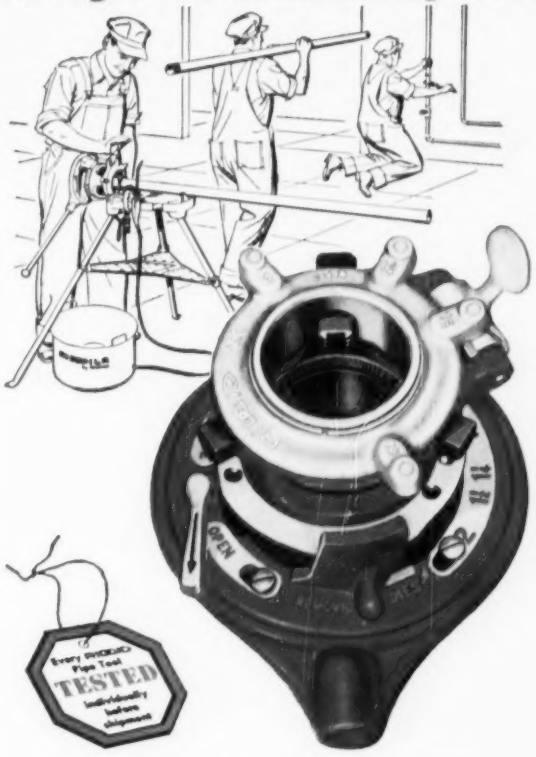
Jam-proof 65R Now Guarantees Straight Threads Every Time



. . . Revolutionary New TC (True-Centering) Workholder centers all pipe, even over or under size

No more crooked threads! 65R pre-sets to size by turn of TC Workholder gauge ring —tightens by palm-of-hand push on forged cam lever. All 3 jaws close together on pipe by one mechanical action. Always straight threads, jamproof, 1" to 2" with 1 set of dies, fast size change—only 65R offers you so much for your money. Buy it at your Supply House.

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. . . then find out about Wyandotte's Carbose* and Kreelon* CD

Wyandotte CARBOSE (Technical Sodium CMC) overcomes many of the disadvantages of other film-forming materials used for warp sizing. CARBOSE has greater stability; sizes the warps without stiffening them; is quickly and easily desized; and being synthetic, gives a uniform performance every time.

Wyandotte's KREELON CD, an inherently promoted alkylarylsulfonate, is recommended where efficient detergency, wetting and rinsing are required. KREELON CD does a superior job in scouring, kier boiling, after-soaping, and finishing operations for cotton. For efficient scouring, carbonizing scouring, carbonizing and dyeing of raw wool . . . scouring, desizing, and bleaching of silks and synthetics . . . specify inclusion of KREELON CD.

Both CARBOSE and KREELON CD are available from distributor stocks in all principal cities. For technical assistance or product data, call our nearest branch office or write: *Section TI, Wyandotte Chemicals Corporation, Wyandotte, Michigan. Offices in principal cities.*

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Wyandotte CHEMICALS

MICHIGAN ALKALI DIVISION

vertically and set accurately within 1/10 mm by means of a vernier.

The specimen is pre-loaded by means of a weight suspension connected to the bottom grip. A specimen can be loaded from 100 to 5000 grams by load increments of 100 grams. Upon failure of the specimen, the suspension drops and automatically shuts off the machine. The counter has a pre-selection feature, making it easy to perform a given number of bends after which the machine will shut itself off whether or not the specimen has failed. The grip width is 32 mm. The motor is controlled by a switch relay built into the machine, affording the utmost simplicity of operation by means of "On" and "Off" pushbuttons.

Testing Machines, Inc., 123 West 64th Street, New York 23, N. Y.

Do you want more data? Write ◆ or use card on page 179; list N-119

Warp knitter uses no needles

Without benefit of needles (they are replaced by yarn feeders) as the knitter knows them, the Waltex loom produces warp knit fabrics. In effect the machine combines the design versatility of weaving with the simplicity and usefulness of the knitwear system. The cloth is run proof, and can represent most of the designs found in other fabrics. Suggested cloths include ladies' gloves, suits, scarves, etc.

Two loom beams are mounted on opposite sides of the machine to supply warp yarns. The filling is drawn from supply packages, and inserted by six shuttles in any combination of the possible six colors. Once inserted it controls the filling-wise elasticity of the fabric. With the thread feeders provided, the machine will use yarns ranging from 2/24 (woolen) to 2/48, and will operate at the approximate equivalent of 160 courses per minute.

Ditta A. Caperdoni, Corso Magenta 83, Milan, Italy.

Do you want more data? Write ◆ or use card on page 179; list N-120

"Safety stitch" sewing machine

A sewing machine designed for simultaneous seaming and overseaming is especially suitable for such operations as attaching neck pieces on ladies' knitted blouses.

The machine is equipped with three needles and trimming mechanism, with front disposal for trimmings. The left-hand needle produces a single row, Type 401, double lock stitch. Simultaneously to the right the machine trims the material and finishes the edge with the four-thread, two-needle interlock stitch, Type 602.

Some of the Style 52900 B1 machine's important features include: lightweight parts and needle bearings which make possible speeds up to 5000 rpm for many applications; new threading system which eliminates malformed stitches and improves stitch formation and chaining of the two individual stitch formations; automatic, "sealed-in" lubrication that guards against contamination; no open oil sumps to require frequent cleaning; an oil return pump which returns any isolated oil to the reservoir; and a new shorter crank-type looper driving arm that provides positive drive and eliminates overthrow.

Union Special Machine Co., 400 N. Franklin St., Chicago 10, Ill.

Do you want more data? Write ◆ or use card on page 179; list N-121

Equipment briefs

A vat dye of extraordinary fastness to weathering, known as Cibanone Copper Red R Paste, has an attractive brick red shade with high fastness to light, washing, bleaching, crocking, and water spotting. The paste is applied by all regular exhaustion methods, including Williams unit, pad-steam, and package-dyeing procedures.

Ciba Co., Inc., 527 Greenwich St., New York 14, N. Y.

Do you want more data? Write supplier or use card on page 179; list N 201

All-steel do-it-yourself industrial utility buildings with adjustable columns and girts for easy plumb and squaring, are available. Of a pole-type building line, called Stran-Master, they offer industry fire-safe warehousing which can be used for light manufacturing, etc. Available in a wide range of sizes, from widths of 12' to 120' and in length to any multiple of 16' (windows and doors can be placed anywhere) the units can be ordered with any or all walls open.

Stran-Steel Corp., Unit of National Steel Corp., Detroit 29, Mich.

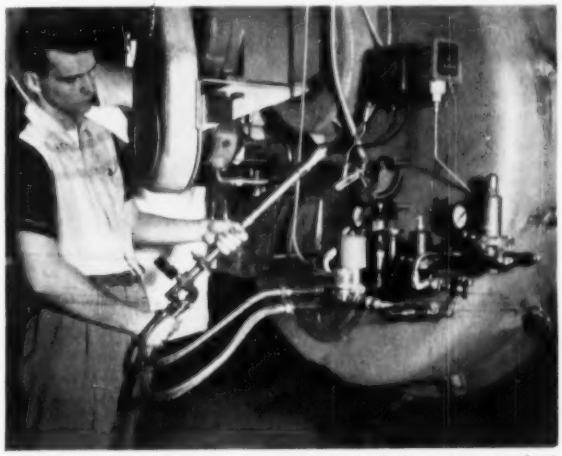
Do you want more data? Write supplier or use card on page 179; list N 202

A full dull-luster nylon carpet staple meets all performance standards of its companion bright nylon carpet staple, including the same high degree of dye lightfastness and resistance to wear. The staple shows improved resistance to soiling.

E. I. du Pont de Nemours & Co., Inc., Textile Fibers Div., Wilmington 98, Del.

Do you want more data? Write supplier or use card on page 179; list N 203

A packaged boiler eliminates the need for an expensive chimney. The Monitor is available through 60 horsepower or 2070 pounds of steam per hour and can be fired with oil or gas or furnished with a combination burner. The Model CB boiler design includes four-pass construction,



forced draft, updraft construction, and five square feet of heating surface per boiler horsepower. A single-tip retractable nozzle that simplifies cleaning of the burner nozzle, allows the nozzle to be inspected without removing any bolts.

Cleaver-Brooks Co., Milwaukee 12, Wis.

Do you want more data? Write supplier or use card on page 179; list N 204

A brown dyestuff called Indanthrene Printing Brown

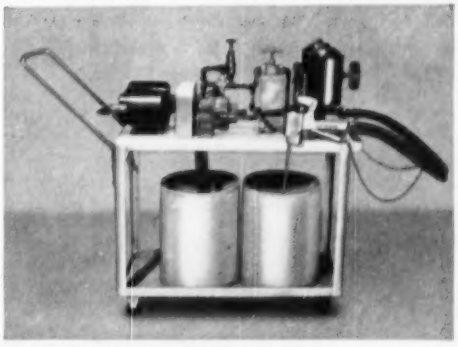
It's Here! **The New**

Wicaco Spindle Oiling Machine

The all-new Wicaco Spindle Oiling Machine fulfils the popular demand for a more efficient and economical spindle oiler.

IT HAS THESE OUTSTANDING FEATURES

- ★ Smaller than previous models—it can go anywhere a man can walk.
- ★ Light weight—it can be pulled along narrow aisles easily.
- ★ Economical—lower first cost and inexpensive operation.
- ★ New style, improved filter system cleans old oil for reuse and longer life.
- ★ Greater efficiency—operates with as little as one gallon of oil, filters the old oil and returns it for further use, or flushes out the old oil and replaces it with all new oil.
- ★ Complete flexibility—different oils may be used interchangeably by simply switching oil containers.
- ★ New filter gauge tells when filters need changing.
- ★ Relief valve permits full control of pressure from 0 to 35 lbs.



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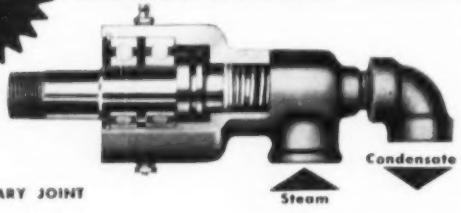

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- Low Torque
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- Automatic take-up for normal wear
- Leak-proof
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SEALOL

THE BALANCED PRESSURE SEAL

HRR Suprafix paste is a vat dyestuff offered for printing bright reddish browns of superior light and wet fastness on cotton, rayon, and linen. This dye offers advantages in economy, fastness of shade to resin finishing, and less tendering of cellulosic fabrics upon exposure to light.

General Dyestuff Co., Div. of General Aniline & Film Corp., 435 Hudson St., New York 14, N. Y.

Do you want more data? Write supplier or use card on page 179; list N 205

A metallo-organic slimicide is available. The active ingredient of Eltox is effective in dosages as low as 200 parts per billion, and has proven itself against the types of slime commonly found in cooling towers.

United Chemical Corp., 45 Seekonk St., Providence 6, R. I.

Do you want more data? Write supplier or use card on page 179; list N 205A

A lamp which gives brilliant and uniform illumination (free from shadows and bright spots) is called the Industrial Bright Beam Lamp, and is optically designed for all close work operations. Its adjustability enables it to be placed in practically any position for convenient and best illumination for inspection of threads, etc.

Edmund Scientific Co., Barrington, N. J.

Do you want more data? Write supplier or use card on page 179; list N 206

A power strap feeder, the Signode Model PSF-1, rapidly and easily feeds steel strapping vertically around packages, skids, crates, or bundles. It feeds up to 240 feet of strapping per minute (from 5/16" x 0.012" to ¾" x 0.035")—when used with power strapping tools, it applies up to 200 straps per hour. It handles a wide range of package shapes and sizes, and will feed straps through openings in skid runners.

Signode Steel Strapping Co., 2600 North Western Ave., Chicago 47, Ill.

Do you want more data? Write supplier or use card on page 179; list N 207

A direct dye which yields bright shades of reddish orange on cotton and rayon possesses moderate fastness to light and most wet processing. Aftertreatment of National Erie Brilliant Orange 3RC with urea-formaldehyde resin improves light and washing fastness, while altering the shade appreciably yellower. It dyes cotton-rayon blends to a good union and leaves acetate practically unstained.

National Aniline Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.

Do you want more data? Write supplier or use card on page 179; list N 208

Chair fitting is a science made possible through the Seat-O-Meter, an instrument which acts as a "perpetual snow bank or flask of moulding sand." Every inch of the human form contacted in a seated position is calibrated—height and depth of seat, required position and relaxation of arm and elbow to working plane, etc. The units are made in several sizes and styles, and are approved by the Correct Seating Institute.

Standard Foundry Products, 412 Laurel St., Reading, Pa.

Do you want more data? Write supplier or use card on page 179; list N 209

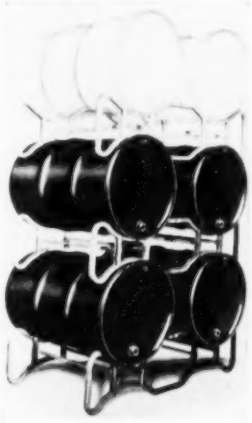
A laboratory oven designed specifically for certain ASTM tests involving accelerated aging at controlled

temperatures for rubber, plastics, textiles, insulations, roof coverings, varnishes, and paints, is called Blue M new Con-Wate Mechanical Convection Aging Oven. Available with Power-O-Matic control which keeps the temperature within plus or minus ½ C throughout its temperature range of 180 C.

Blue M Electric Co., Blue Island, Ill.

Do you want more data? Write supplier or use card on page 179; list N-210

A steel drum rack designed to permit the handling and stacking of loaded or empty barrels and drums with standard fork lift trucks, supports two loaded barrels and makes easy the stacking of pairs of containers to any practical height. The units are so made that a two-drum lift can be made from the front, back, or either side. Any standard fork lift truck can pick up, move, and stack as many tiers of loaded drums at one time as its lifting capacity permits.



Pressed Steel Div., Republic Steel Corp., 6100 Truscon Ave., Cleveland, Ohio.

Do you want more data? Write supplier or use card on page 179; list N-211

An azoic base applicable to cottons and rayons, National Red PDC Base, produces a range of bright, bluish-red shades when diazotized and coupled with most National naphthols. Those couplings largely exhibit good fastness to light, and very good to excellent fastness to most wet fastness tests. Recommended for coloring yarns for toweling and other materials where peroxide bleaching fastness is required, for when coupled with National Naphthol AS-SW, it has very good fastness to such bleaching.

National Aniline Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.

Do you want more data? Write supplier or use card on page 179; list N-212

Controlled stripping of reducible dyes is made possible by a liquid titanium preparation called Wilstrip. The product may be used cold for slow-action stripping, or hot for faster results.

A. L. Wilson Chemical Co., Kearny, N. J.

Do you want more data? Write supplier or use card on page 179; list N-213

A lofted filament rayon yarn, Skyloft, provides new and unique properties, among them being improved fabric body, and pleasing textures and hand. Initial production is in 2200, 2700, 4300, and 5300 deniers.

American Enka Corp., 206 Madison Ave., New York 16, N. Y.

Do you want more data? Write supplier or use card on page 179; list N-214

A series of lubricants is available to the knitting industry. Artel circular knitting oil is for all types of circular knitting machinery. Guaranteed not to streak or stain fabrics, it resists carbon formation and prevents machinery from tightening up.

Artel trough oil, a lubricant developed especially for use in full-fashioned trough boxes, is a lubricant for oiled yarn knitting. It assures smooth running with mono-

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DRIES DOWN quickly and completely under air blow-off or wiping.

HIGH FLASH POINT. You get safety to spare.

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filament and sized yarns. Completely scourable.

Artel wick oil reduces wear on carrier tubes, sinkers, and dividers by completely lubricating the filament yarn. The wick oil produces more even lengths by removing the cause of friction and drag. Contains antistatic agents.

Reading Testing Laboratories, Inc., Reading, Pa.

Do you want more data? Write supplier or use card on page 179; list N-215

Dyeing of blends of solid shades is done through a simple dyeing procedure which also offers economical methods for dyeing many single-fiber fabrics. The Microfix process is a short, one-bath pad-dyeing procedure, followed by drying and curing; Microfix dyes are special water-insoluble pigments which are applied in conjunction with three synthetic resin binders: Microfix Binders I, II, and III.

Ciba Co., Inc., 627 Greenwich St., New York 14, N. Y.

Do you want more data? Write supplier or use card on page 179; list N-216

An amorphous wax sizing aid, Houghto-Wax, is now being supplied in flake form rather than in solid blocks. The flake form speeds "meltability" and is much easier for operators to handle than are the blocks.

E. F. Houghton & Co., 303 West Lehigh Ave., Philadelphia 33, Pa.

Do you want more data? Write supplier or use card on page 179; list N-217

A coffee vending machine which can be located near production points, requires little maintenance, and makes the beverage available whenever it is wanted. It also makes hot chocolate.

Field Research Div., Paper Cup and Container Institute, 342 Madison Ave., New York 17, N. Y.

Do you want more data? Write supplier or use card on page 179; list N-218

A bright copper-red vat dyestuff, Sandothrene Copper Red NR Double Paste Ultrasperse, has a high degree of stability of shade in all lights. Suitable for application by all vat dyeing methods, it has good all-around light fastness, and fastness to peroxide bleaching.

Sandoz, Inc., 61-63 Van Dam St., New York 13, N. Y.

Do you want more data? Write supplier or use card on page 179; list N-219

Two solution-dyed colors are available in carpet rayons. Coco is available in 8-denier bright and 15-denier dull: Sable is available in 15-denier bright. Additionally, Cafe Brown and Midnight Black are available in 8-denier bright.

Hartford Rayon Co., 140 Madison Ave., New York 16, N. Y.

Do you want more data? Write supplier or use card on page 179; list N-220

A deep blue dye for Orlon and other acrylic fibers has outstanding fastness to light. A basic dyestuff called Maxilon Blue GLA, it gives maximum or near-maximum fastness to perspiration, washing, fulling, sea water, wet cleaning, water bleeding, carbonizing, and dry cleaning on the other fibers for which it is recommended.

Geigy Dyestuff, Div. of Geigy Chemical Corp., Ardsley, N. Y.

Do you want more data? Write supplier or use card on page 179; list N-221

Build-up of starch, gelatin, synthetic rubber latex, and most synthetic resins is prevented by a film of F-121. When properly applied and cured, the compound reduces the build up of sizing and coating materials on drying cans, rolls, and slashers, and lasts from several weeks to months in normal textile mill service.

Dow Corning Corp., Midland, Mich.

Do you want more data? Write supplier or use card on page 179; list N-222

A high-speed moisture analyzer, the Schlumberger NMR (Model 104) makes quantitative determinations of moisture content in a wide variety of solids including wood pulp, cereals, cotton, etc. Accurate analysis is carried out in from 30 seconds to four minutes. Samples analyzed are not altered in any way.

Schlumberger Well Surveying Corp., Ridgefield, Conn.

Do you want more data? Write supplier or use card on page 179; list N 223

A bright blue direct dye called Pyrazol Fast Sky Blue 7 GUL has good fastness—aftertreatment with U.F. or U.F./Sandofix does not cause degradation of the light fastness.

Sandoz Inc., 61-63 Van Dam St., New York 13, N. Y.

Do you want more data? Write supplier or use card on page 179; list N 224

A cleaning brush which holds 1¾ ounces of cleaning fluid in its handle permits the operator to select the fluid as he needs it by pressing a button valve. Called Handi-

Brush, it can be stored for long periods with the fluid held intact. Recommended for removing troublesome grease, gum, and other soil spots.

Bruns Brush Co., 18704 Nottingham Rd., Cleveland, Ohio.

Do you want more data? Write supplier or use card on page 179; list N 225

A 360-denier, multi-filament lofted yarn utilizes a two-denier-per-filament construction to achieve an unusually soft, luxurious hand. Recommended for use in shirt, dress, and sportswear fabrics, the yarn is available in bright, dull, and all Chromspun colors.

Eastman Chemical Products, Inc., 260 Madison Ave., New York 16, N. Y.

Do you want more data? Write supplier or use card on page 179; list N 226

A heavier and more versatile overhead fork lift can be traveled to front, rear, or either side of a building—up, down, and turned through a full circle clockwise or counterclockwise. The lift is particularly advantageous for handling and storing materials such as boxes, rolls of carpeting, cloth, etc. Available for various capacities and lifts.

Cleveland Tramrail Div., The Cleveland Crane & Engineering Co., Wickliffe, Ohio.

Do you want more data? Write supplier or use card on page 179; list N 227

Packaged adjustable speed drives are available in ratings of three through 150 horsepower, and in speed ranges of 8 to 1 and higher. The Speed Variators are designed for use on continuous processing lines, calender drives, machine tools, crane hoists, or wherever adjustable speed for fine control is needed. An Amplistat regulator with silicon rectifiers is standard on the new line.

General Electric Co., Schenectady 5, N. Y.

Do you want more data? Write supplier or use card on page 179; list N 228

The Laurel Leaf

BUSINESS MAGAZINE EDITION

It's *easy* to see why Laurel Quality Emulsions are the *first thought* in conditioning and lubrication of both natural and synthetic yarns. Reliable, versatile, and easy to use, they take the toughest problems in stride.

Laurel Emulsions invariably give superior lubrication qualities, making for better, smoother-running yarns that assure even stitches and fine garments. They're easy on the yarn, too, whether its natural, bleached, or dyed.

They give stronger yarns with fewer breaks, and provide a softer cone, reducing the number of pulls and sloughs off the cones.

Laurel Emulsions give consistent, high-quality service on natural, synthetic, or blended spun yarns. Easy to prepare for use, they form stable emulsions which can be applied readily from emulsion troughs on standard coning or winding machines. All are highly resistant to discoloration and to odor formation in storage. They are easily removed in a regular scour or boil-off—never interfering with subsequent dyeing, bleaching, or finishing.

There's *one best emulsion* in the Laurel line to condition and lubricate *any* yarn better: *Laurel Hydrocop and 3B Softener*, the versatile emulsions for *all* fine yarns; *Laurel Wax Emulsion WG* for use on all yarns especially when cold water dispersibility is desired; *Laurel Hydrowax HC* for rayon and cotton chenille yarns; and *Laurel Ruxite A* when a soluble oil is required. You can't go wrong with one of these or another of Laurel's wide range and types of quality emulsions.

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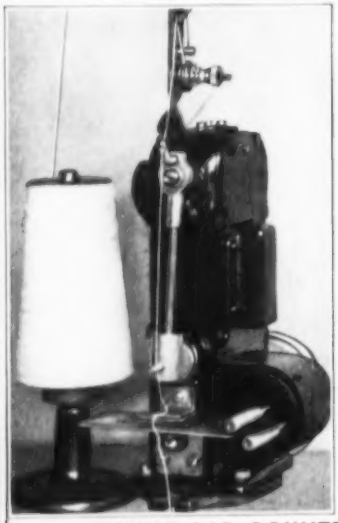

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Kent Printing Ink Corp., Roslyn Heights, N. Y.

Do you want more data? Write supplier or use card on page 179; list N 229

A permanent magnetic drum for automatic separation of tramp iron in slurries is installed in a chute so designed as to direct the flow of slurry into the drum's magnetic field. Any tramp iron is forced to adhere to the revolving shell until carried out of the magnetic field. An epoxy resin seal has been developed for the joints between the drum shell and the end flanges, and between the drive extension and the end flange.

Eriez Mfg. Co., Erie 6, Pa.

Do you want more data? Write supplier or use card on page 179; list N 230

A pleasantly scented safety cleaning solvent for wipe or dip cleaning of greasy and oily machine parts and electrical equipment has no flash point under normal usage. It offers the advantage of high solvent power with extremely rapid evaporation.

Harco Chemical Co., Cranford, N. J.

Do you want more data? Write supplier or use card on page 179; list N 231

New books

Practical questions, such as cost, uses, properties, or source, are answered in *Concise Guide to Plastics.* It describes all the known American commercial plastics, including those still in the laboratory stage, and instructs in the selection, use, and forms of plastics, and contains discussions of which ones best suit particular products. Available from Reinhold Publishing Corp., 430 Park Ave., New York 22, N. Y. Price: $6.95.

In *Handbook of Twisting* the author, Neal Truslow, has given a thorough treatment of operations involving twist. For each of the various twist phenomena he has attempted to give first an analysis of the scientific principles involved. With this as the background, he then presents practical applications of the theories. Descriptions of dozens of different machines for inserting twist are given; the effects of twist on a wide variety of natural and synthetic fibers in both filament and staple also are presented. The effect twist has on the final product is discussed, covering such diverse factors as strength, appearance, and other properties of knitted hose, belt ducks, etc. Copies available from Clark Publishing Co., Charlotte, N. C. Price: $5.00.

The original *Fire and Accident Loss Control Index and Directory* is being brought up to date with the first of a continuous series of supplements. The book contains a section devoted to an "Index and Guide" to fire and accident control subjects, and a "Directory" of publications containing this information. Copies of the original are available from Loss Control Associates, 629 Oakmont Dr., Plattsmouth, Neb., at $75.00 per copy. The supplemental service is available at $17.50 per year.

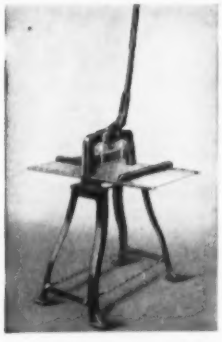
The 62 papers presented at the Perkin Centennial, held in New York City in September 1956, are available as *Proceedings of the Perkin Centennial*. The papers, authored by internationally-known experts, touch upon all phases of the use of color in countless industries. Copies have been distributed to those who registered at the Centennial, and additional copies are available at $10.00 each from George P. Paine, Executive Secretary, AATCC, Lowell Technological Institute, Lowell, Mass.

The *Handbook of Powered Industrial Trucks* is the first of such manuals to cover all types of powered industrial trucks. The book is divided into five sections, covering selection, procedures, and operation. Available from the Industrial Truck Association, Ninth and F Streets, Washington 4, D. C. Price: $5.00.

Based on material presented on February 25 through February 27, 1957, at the Third Annual Electronics Conference and Exhibit sponsored by the Finance Division of the American Management Association, *Electronics in Action* describes the value of electronic data processing (EDP) in terms of improved operations and cost reduction. How a number of companies with both large and small EDP installations have actually applied the techniques to basic management problems is described. How personnel are selected and trained for the EDP team, and how EDP systems have been developed and utilized to achieve maximum results are explained by companies experienced in EDP. Actual feasibility studies — including one which did not recommend the installation of an EDP system — are included. One such study from United Merchants and Manufacturers, Inc., gives the approach a textile firm used. Available from American Management Association, Inc., 1515 Broadway, New York 36, N. Y. Price: $3.75.

Considering the recent rash of mergers and acquisitions, *A Case Study in Corporate Acquisition* is timely information; and a particularly valuable source of such information is the pertinent data made available by successfully merged companies. Included is material gathered at a special American Management Association conference including practical reports of company experiences in specific areas of integration: financial management (The Kendall Co.); production (Long Mfg. Div., Borg-Warner Corp.); and marketing (J. P. Stevens & Co., Inc.). Three other papers consider the integration of personnel. Among the other reports given is one concerning the legal, financial, and tax aspects, and one providing an actual history of corporate acquisition, starting with the historical background and tracing all steps of the acquisition process. Available from American Management Association, 1515 Broadway, New York 36, N. Y. Price: $1.75 (AMA members: $1.00).

The reports and discussions held in conjunction with the annual Plant Maintenance and Engineering Show are given in *Techniques of Plant Maintenance and Engineering—1957*. The volume contains all the prepared papers, and the transcripts of the discussions that followed them. Copies may be obtained from Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y. Price: $10.00.



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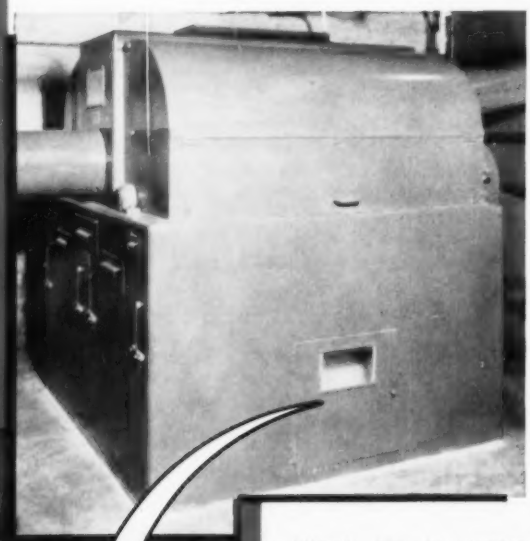
SM	.6 - 1.0	LM	1.6 - 2.5
M	.7 - 1.6	SGO - GO	2.0 - 4.0



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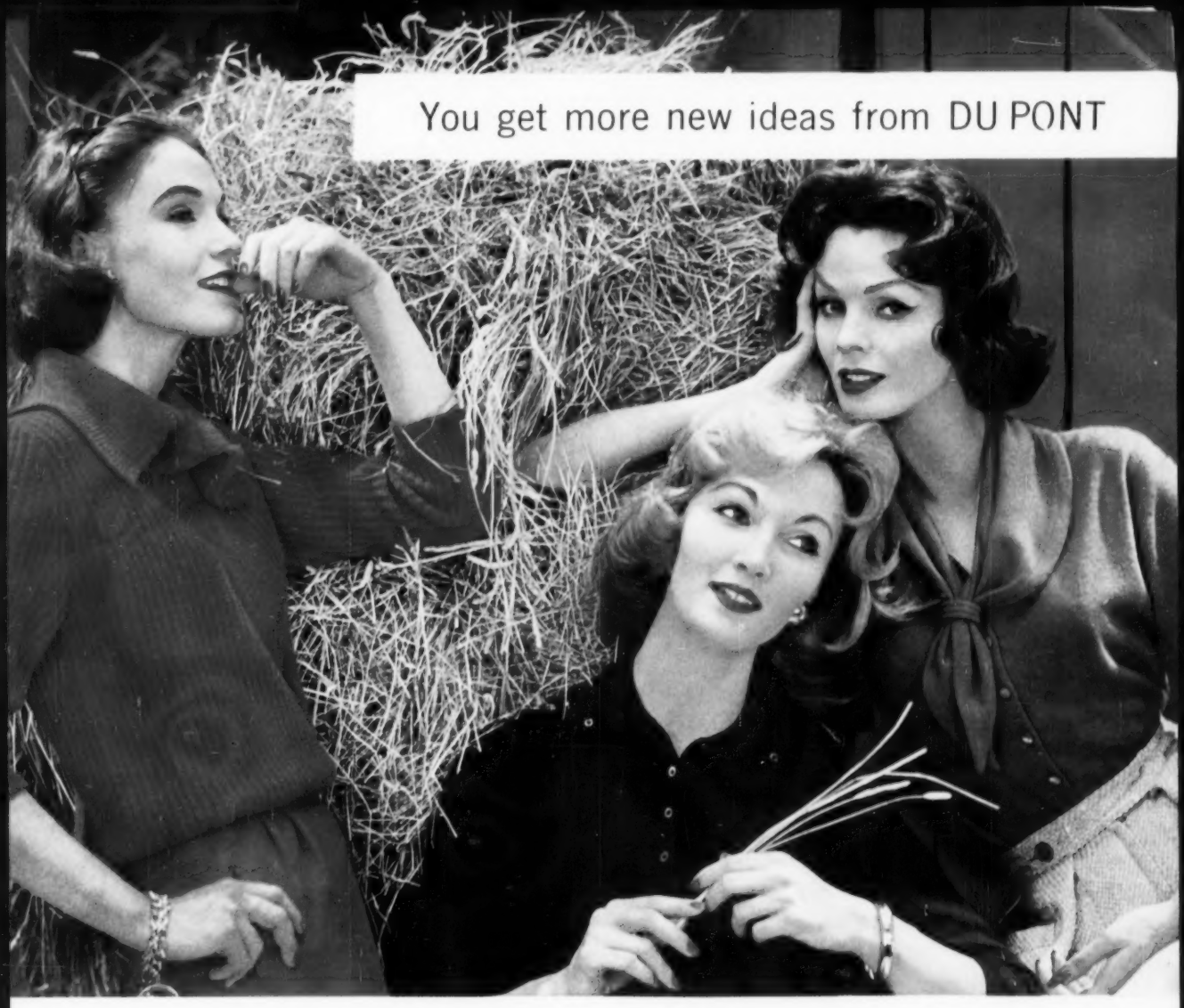

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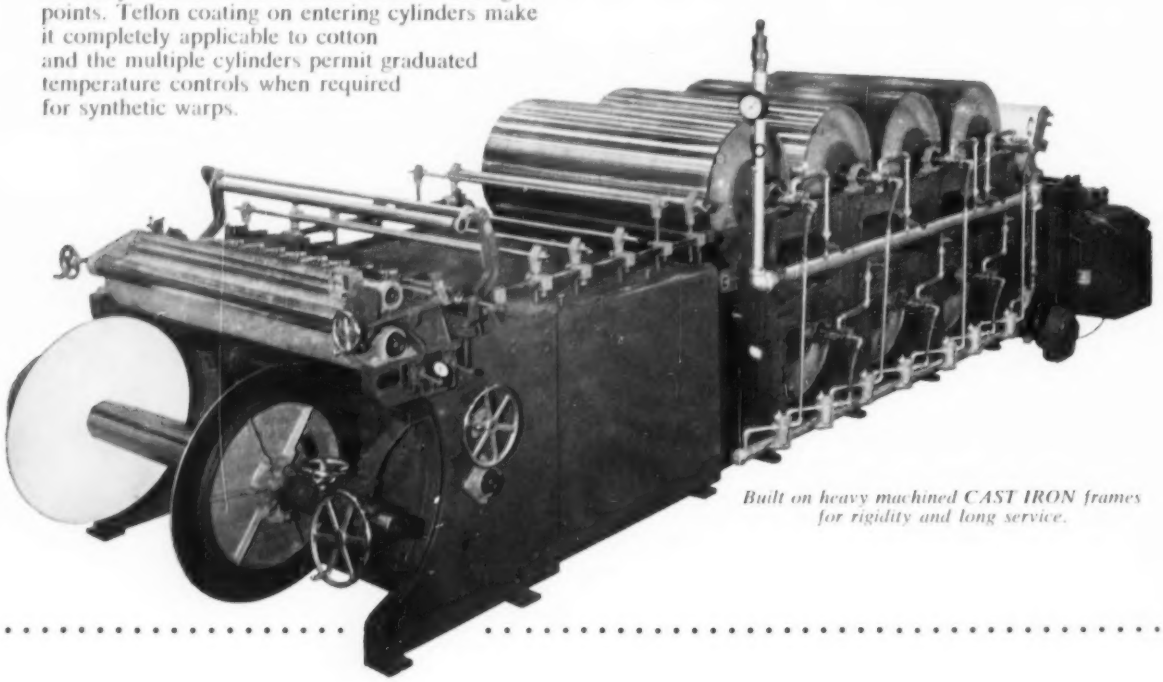

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12-6 SODA ASH. Book deals with reactions, handling and storing, manufacturing methods, applications, etc., and containing various physical property graphs. Wyandotte Chemicals Corp., Michigan Alkali Division, Wyandotte, Michigan.

12-7 HUNTER BAROTOR. Bulletin gives 19 reasons why the Hunter Barotor can give you complete satisfaction in dyeing all synthetics. Also tells of two actual installations at two leading mills. James Hunter Machine Co., North Adams, Mass.

12-8 MODERN LUBRICATION. Bulletin X-125 describes complete and modern line of lubricating equipment for textiles. Oil-Rite Corp., 2318 Waldo Blvd., Manitowoc, Wisconsin.

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12-16 "DIAL-A-FIBER". Ingenious circular chart indicates properties and compatabilities of UVITEX for application on natural and synthetic fibers. Ciba Co., Inc., Technical Dept., 627 Greenwich St., New York 14, New York.

12-17 HYDROGEN PEROXIDE BLEACHING. Booklet discusses advantages, operating details and savings in chemical costs of Activated Hydrogen Peroxide Bleaching Process for Cotton. Solvay Process Div., Allied Chemical & Dye Corp., 61 Broadway, New York 6, New York.

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12-19 TEXTILE FINISHING. Information on machines and installations for textile finishing. Calenders, mangles, mercerizers, roller printers, continuous bleaching and dyeing units. Linder Presse Union, Frankfurt am Main, Wittlesbacher Allee 60, Deutchland, Germany.

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R-3 Card Grinding Information — Care and operation of cards. B. S. Roy & Son Co., Worcester, Mass.

R-4 Card Clothing — Describes Strip-O-Matic Card Clothing. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia, Pa.

R-5 Versa-Matic Drawing Frame — Describes drafting elements, quality of sliver, roving and yarn possible. Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

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R-126 Gear Bulletins — Cover products and gears for the complete textile mill. Precision Gear & Machine Co., 2001 N. Tryon St., Charlotte 2, N. C.

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R-129 Facts About Your Flyers and Spindles—Advantages of smooth flyer and spindle operation. Ideal Machine Shops Bessemer City, N. C.

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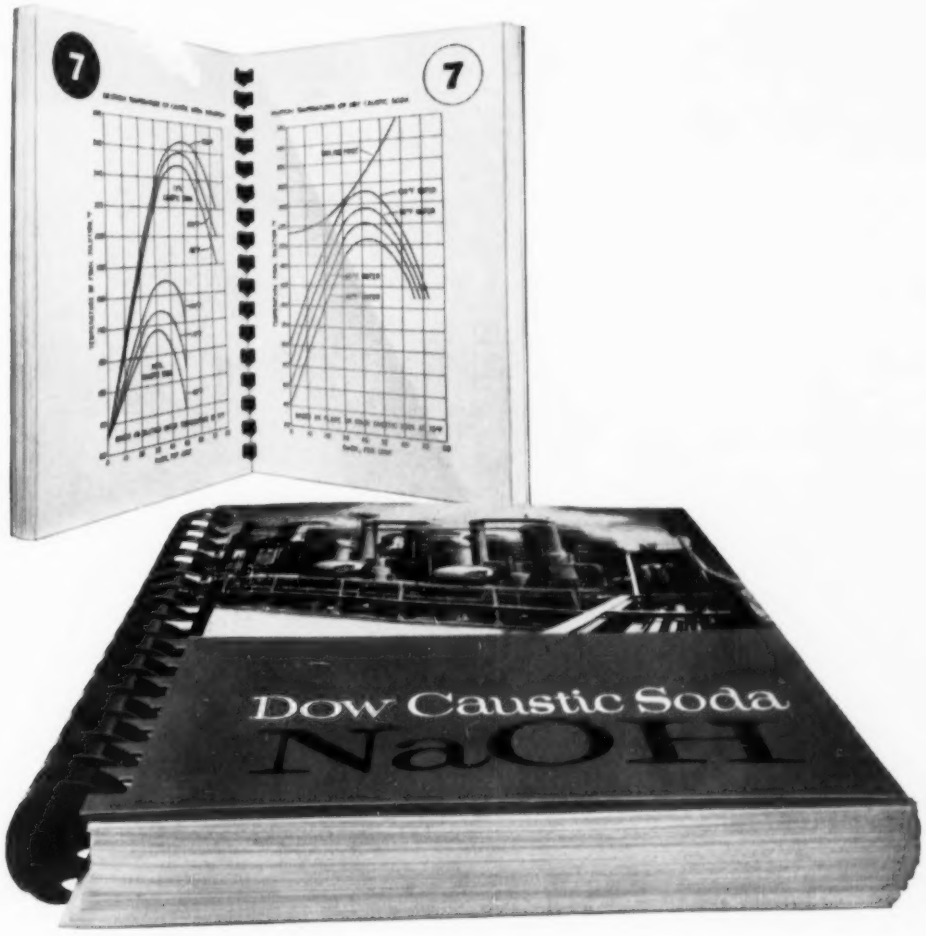

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R-405 Dyeing Equipment — Diagrams and descriptions of complete line. James Hunter Machine Co., North Adams, Mass.

R-406 Urea, Formaldehyde.—Literature on urea, formaldehyde or U.F. concentrate-85. Dept. CUFI-29-1, Nitrogen Div., Allied Chemical and Dye Corp., 40 Rector St., New York 6, New York.

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R-412 Cationic Surface Active Agent — Describes Uversoft "D." Harshaw Chemical Co., 1945 East 97th St., Cleveland 6, Ohio.

R-413 Chemicals, Dyes And Intermediates — Complete file of bulletins available. Metro-Atlantic, Inc., Centredale, R. I.

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R-422 Catalyst AC-6 — Tells how curing efficiency may be stepped up as much as 25%. Monsanto Chemical Co., Plastic Division, Dept. T1-3, Springfield 2, Ohio.

R-423 Soda Ash Bulletin — Contains useful data covering this subject. Solvay Sales Division Allied Chemical & Dye Corp., 40 Rector St., New York 6, New York.

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R-426 Industrial Oil — Catalogs on Industrial Oil and Fatty Acid products. Swift & Company, Industrial Oil Dept., 1800 165th St., Hammond, Indiana.

R-427 Resins & Latices — Describes applications and gives properties. Goodyear Chemical Div., 1144 East Market St., Akron 16, Ohio.

R-428 Chemical Catalog — Lists products with chemical composition, properties and applications. Antara Chemicals Div., General Aniline & Film Corp., 435 Hudson St., New York 14, New York.

R-429 Chemical Bulletins — Issued each month as a help to wet processers. WICA Chemicals, Inc., P. O. Box 506, Charlotte, N. C.

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R-433 Safe Handling Of Hydrogen Peroxide — Lists safety rules to be followed in handling the product. Solvay Process Division, Allied Chemical & Dye Corp., 61 Broadway, New York 6, N. Y.

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R-436 Rapidase For De-Sizing — The properties and characteristics of Rapidase in detail. Wallerstein Co., Inc., 180 Madison Avenue, New York 16, N. Y.

R-438 Surface-Active Agent — Properties, applications, of Nonionic Actylphenoxyethanol Triton. Rohm & Haas Co., Special Products Dept., Washington Square, Philadelphia, Pa.

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R-441 Processing Arnel Fabrics and Blends — Formulas for dyeing, printing, finishing and heat treating. Celanese Corp. of America, Textile Div., Marketing Dept., Box 1414, Charlotte, N. C.

R-442 Hycar Latices — Physical properties and typical fields of application. B. F. Goodrich Chemical Co., Dept. HF-5, 324 Rose Bldg., Cleveland 15, Ohio.

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R-448 Ball Bearing Turn Table — Describes 48-inch steel turn table for mills. Birch Brothers, Inc., 32 Kent St., Somerville, Mass.

R-449 Rotary Dyeing Machine — For use in dyeing hosiery, hats, gloves, socks, etc. Smith, Drum & Co., Allegheny Ave., at 5th St., Philadelphia 33, Pa.

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R-464 Automatic Control System For Continuous Bleaching — How to control temperature, pressure and liquid level. Taylor Instrument Companies, Rochester 1, New York.

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R-468 Dyeing Synthetic Fibers—Detailed analysis of methods and materials. General Dyestuff Co., 435 Hudson St., New York 14, New York.

R-469 Single Apron Stock Dryers — Presents latest idea in automatic drying. C. G. Sargent's Sons Corp., Graniteville, Mass.

R-470 Eliminate Dye-Bath Shock — How to protect fabrics from crow's-feet, uneven shades. Foxboro Company, 487 Neponset Ave., Foxboro, Mass.

R-474 Industrial Brushes — Features use on shears, printing machines. M. W. Jenkins' Sons, Inc., 444 Pompton Ave., Cedar Grove, N. J.

R-475 Waste Heat Recovery — Describes system of waste heat recovery from polluted water. Ludell Mfg. Company, 5200 West State Street, Milwaukee, Wis.

R-476 Washers For Scouring, Bleaching, Acidifying — Describes high-capacity, continuous process washers. C. G. Sargent's Sons Corp., Graniteville, Mass.

R-478 Wool Cleaning Unit—Describes unit for cleaning carpet wools mechanically before scouring. Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.

FIBERS AND YARNS

R-501 Textile Research—Story of the Research Department. American Viscose Corp., 350 Fifth Avenue, New York 1, N. Y.

R-502 Fortisan-36, New Textile Fiber—Includes charts, diagrams, text, presents technical properties. Textile Sales Dept., Celanese Corp. of America, P. O. Box 1414, Charlotte, N. C.

R-503 Caprolan Nylon Heavy Yarns—Describes strength, long flex life and ready dyeability. Fiber Sales Dept., National Aniline Div., 261 Madison Ave., New York 16, N. Y.

R-506 Rayon—Mile By Mile—Details on how rayon is produced mile by mile, perfect inch by inch. Industrial Rayon Corp., 500 Fifth Avenue, New York 18, N. Y.

R-507 The Chemstrand Nylon Story—Describes the birth and growth of Chemstrand nylon. Chemstrand Corp., 350 Fifth Ave., New York 1, N. Y.

(Continued Next Page)

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R-601 Testing Instruments—Descriptions of 37 instruments for testing textiles. Custom Scientific Instruments, Inc., 541 Devon St., Kearney, N. J.

R-602 Metal Detector — Spot troublemakers before they harm equipment or fabrics. Radio Corp. of America., Dept. S-271, Building 15-1, Camden, N. J.

R-603 Shadograph Weighing Devices —Pictures and information on various types of scales. Exact Weight Scales Co., Columbus 8, Ohio.

R-604 Evenness Tester—Details on taking the guess out of quality control. Uster Corp., 2516 Wilkinson Blvd., Charlotte, N. C.

R-606 Strobotac — Measures speed of rotating, reciprocating or other cyclic motions. General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.

MANAGEMENT, PROCESS ENGINEERING CONSULTANTS, FACTORS

R-701 Factoring Service—Details on advantages of factoring, including information on general banking and pension plans. Trust Company of Georgia, Atlanta, Ga.

R-702 Beechcrafts At Work — Tells how Beechcraft executive airplanes can save time and money. Southern Airways Co., Atlanta Airport, Atlanta, Ga.

R-705 The Wonalancet Way — Deals with current problems in Textiles. Wonalancet Company, 128 Burke St., Nashua, N. H.

R-706 A Fair Day's Pay And In Return A Fair Day's Work — Outlines proper utilization of labor, material and equipment. American Associated Consultants, Inc., 250 Park Ave., New York, N. Y.

GENERAL PLANT OPERATION

R-801 Textile Brushes — Describes complete line of brushes for all departments of mill. S. A. Felton & Son Co., Manchester, N. H.

R-802 Belt Lacing Equipment — Includes prices, specifications, etc. Clipper Belt Lacer Co., Grand Rapids, Michigan.

R-804 "Motor Selector." — How to select a-c motors for specific application. Bulletin B-2103. Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio.

R-805 Everything For Floor Care — Describes scrubbing, waxing, polishing and mopping equipment as well as waxes, sealers, and cleansers. Finnell System, Inc., Dept. TI, 1300 East St., Elkhart, Ind.

R-806 Rotary Pressure Joints—Details on self-lubricating, self-adjusting, self-aligning joints. The Johnson Corp., Three Rivers, Mich.

R-807 Servicing "One-Shot" Lubricators—Describes high capacity spring discharge piston pump lubricator. Bijur Lubricating Corp., 151 W. Passaic St., Rochelle Park, N. J.

R-809 Wrap Up Lint Problems—Automatic lint filters remove lint from air, winds it into desposable roll. Bulletin 234, American Air Filter Co., 275 Central Ave., Louisville 8, Ky.

R-810 Stop Corrosion — Details on "Speed-Rex" paint for metal, wood and concrete. Truscon Laboratories, Box 69, Milwaukee Junction, P. O. Dept. T, Detroit 11, Mich.

R-812 Mechanical Power Transmission — Includes drawings, dimension, weights, prices, application. Dodge Mfg. Corp., Mishawaka, Indiana.

R-816 Leather Belting — Selection, installation, proper maintenance. Atlanta Belting Co., 508-510 Whitehall St., S. W., Atlanta, Ga.

R-817 One-Shot Lubricators—Details on pull-type semi-automatic lubricators. Bijur Lubricating Corp., 151 W. Passaic St., Rochelle Park, N. J.

R-820 Floaxial Dial Scales — Explains mechanism and gives applications. Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.

R-821 Modern Methods Of Textile Floor Maintenance — Complete details on taking care of mill floors. G. H. Tennant Co., 2530 N. Second St., Minneapolis 11, Minn.

R-822 Industrial Greases — Describes multi-purpose lithium soap industrial greases. Sinclair Refining Co., 600 Fifth Ave., New York, New York.

R-823 Roller Bearings For Textiles —How roller bearings are employed for more profitable textile production. Hyatt Bearings Div., General Motors Corp., Harrison, N. J.

R-824 Cylinders And Boosters — Complete listing of "in stock" equipment including proce and description. Miller Fluid Power Co., 2040 N. Hawthorne, Melrose Park, Ill.

R-826 "Maintenance of Variable Speed Drives" — Illustrates simple program for keeping drives in top shape. Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio.

R-828 Blower And Exhausters — Full description, including detailed drawings. Buffalo Forge Co., 490 Broadway, Buffalo 5, N. Y.

R-829 Paint Stripping Booklet — Explains simplified method of stripping paint. Oakite Products, Inc., 22 Thames St., New York 6, New York.

R-830 Air Filtration — Illustrates Auto-Airmat, a dry-type air filter. American Air Filter Co., Inc., 275 Central Ave., Louisville 8, Ky.

R-832 Drinking Fountains & Coolers —Description of all models, dimensions, illustrations. Halsey W. Taylor Co., Warren, Ohio.

R-833 Textile Leathers Catalog — Characteristics and advantages of "Tannate" leathers. J. E. Rhoads & Sons, 2100 W. Eleventh St., Wilmington, Del.

R-834 Catalog Of Needle Bearings — Design, application for five types of needle bearings. The Torrington Co., Torrington, Conn.

R-835 Textile Lubrication — Shows methods and means of lubricating all machinery. The Texas Co., 135 East 42nd St., New York 17, N. Y.

R-836 Metered Lubrication — Points up advantages of central lubrication systems. Bijur Lubricating Corp., Rochelle Park, N. J.

R-837 Service Procedure For Ball Bearings—Helpful manual shows how to increase life of ball bearings. New Departure Div., General Motors Corp., Bristol, Conn.

R-839 Lubrication Of Electric Motors —How to lubricate and clean ball and roller bearings. New York & New Jersey Lubricant Co., 292 Madison Ave., New York 17, New York.

R-840 Ball Bearings For Textile Machinery — Bearings for all phases of textile processing. The Fafnir Bearing Co., New Britain, Conn.

R-841 Lubrication Of Bearings — Helpful list of do's and don'ts to prolong bearing life. New York & New Jersey Lubricant Co., 292 Madison Ave., New York 17, New York.

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R-842 Textile Mill Cleaning Guide — Methods and means of proper cleaning and maintenance. Oakite Products, 52 Rector St., New York 6, New York.

R-843 For Static Elimination — Eliminates static safely, simply and inexpensively. Simco Co., 980 Walnut St. Lansdale, Pa.

R-845 Cut Costs With Moyno Pumps — Describes "progressing cavity" pumps for mercerizing and sizing. Bulletin 30-TI, Robbins & Myers, Inc., Springfield, Ohio.

R-847 Lubricants For Textiles — Working samples of bearing lubricants, spindle oils, etc. Georgia-Carolina Oil Co., Box 101, Macon, Ga.

R-850 New Lubricated Plug Valves—Semi-steel and steel lubricated plug line. The William Powell Co., 2525 Spring Grove Ave., Cincinnati 22, Ohio.

R-851 "Tank Talk"—Shows various types of elevated steel tanks. R. D. Cole Manufacturing Co., Newnan, Ga.

R-852 Cotton Mill Equipment — Traces pictorially the steps in processing raw cotton into finished cloth. Westinghouse Electric Corp., 511 Wood St., Pittsburgh 30, Pa.

R-853 Micro Switch Bulletin—Catalog of products includes prices, applications, etc. Micro Switch Div., Minneapolis-Honeywell Regulator Co. Freeport, Ill.

R-854 Roller Bearings For Textiles—How roller bearings can help production. Hyatt Bearings Div., General Motors Corp., Harrison, N. J.

R-855 Unit Heater — Data on the Herman Nelson horizontal and vertical units. American Air Filter Co., Inc., 215 Central Ave., Louisville, Ky.

R-856 Stainless Steel For Textiles—Applications and advantages of stainless textile equipment. Allegheny-Ludlum Steel Corp., Dept. TI-93, Oliver Bldg., Pittsburgh 22, Pa.

R-857 Finnell Combination Scrubber-Vac—Illustrated literature gives complete specifications and describes various methods of combination-machine-scrubbing, including method recommended for cleaning oily floors.—Finnel Systems, Inc., 1300 East St., Elkhart, Indiana.

R-861 "Vari-Pitch" Sheave Bulletin —Control by means of pitch diameter adjustment described. Allis-Chalmers Mfg. Co., Milwaukee 1, Wis.

R-863 Penetrating Wood Finish — Describes floor seals for textiles. E. I. Du Pont De Nemours & Co., Inc., Finishes Div., Wilmington, Del.

R-864 Certified Climate Air-Changer System — Describes use with direct humidification for partial or complete air conditioning, Parks-Cramer Co., Fitchburg, Mass.

R-868 Ridge Tool Prices—Capacities and weights included along with pictures. Ridge Tool Co., Elyria, Ohio.

R-869 Stainless Steel Fabrication — Information on ventilating and drying, slasher exhaust, and materials handling in stainless. Sims Metal Works, West Point, Ga.

R-872 Metal Conveyor Belts — Illustrates entire range of manufacture. Ashworth Bros., Inc., Metal Products Div., Fall River, Mass.

R-873 Rihco Humidifiers And Cooling Systems—Describes new atomizers to lessen air consumption in evaporative cooling systems. Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

R-874 Dynac Brake Motors—Electrical braking of a-c motors-roving, spinning, knitting. Westinghouse Electric Corp., Pittsburgh, Pa.

R-875 Textile Applications For "Scotch" Tape—Some good ideas on using "Scotch." Minnesota Mining & Mfg. Co., St. Paul 6, Minn.

MATERIALS HANDLING

R-901 Casters And Wheels—Casters and wheels for all applications. Darnell Corp., Ltd., 12000 Woodruff Ave., Downey, Calif.

R-902 Canvas Baskets — Complete line for textile use. W. T. Lane & Brothers, Poughkeepsie, N. Y.

R-903 Overhead Handling Equipment — Shows successful applications of monorail systems. American Monorail Co., 13106 Athens Ave., Cleveland 7, Ohio.

R-905 Conveyor Key Book—How to step-up production with modern conveying. Logan Co., 1115 Franklin St., Louisville, Ky.

R-906 How To Select A Lift Truck—Excellent means for price comparison between similar trucks. Hyster Co., 2902 N.E. Clackamas St., Portland 8, Oregon.

R-907 Corrugated Containers — Describes Multi-Unit and Bulk Container. Gaylord Container Corp., 111 N. 4th St., St. Louis 2, Mo.

R-909 Tramrail Engineering And Application — Data on how Tramrail Equipment can cut handling costs. Cleveland Tramrail Div., Cleveland Crane and Engineering Co., 1036 East 289th St., Wickliffe, Ohio.

R-910 How To Specify Packaging — Regulations on shipment, how to determine which package to use. Hinde & Dauch, Sandusky, Ohio.

R-911 New Lift Trucks—Shows latest trends in lift truck design. Hyster Co., 2902 N.E. Clackamas St., Portland 8, Oregon.

R-912 Materials Handling For Textiles—Shows how fibre trucks can increase efficiency, protect products. National Vulcanized Fibre Co., Wilmington 99, Del.

R-913 Continuous Power Conveyor—Complete information on Zig-Zag Conveyor. Richards-Wilcox Mfg. Co., Aurora, Ill.

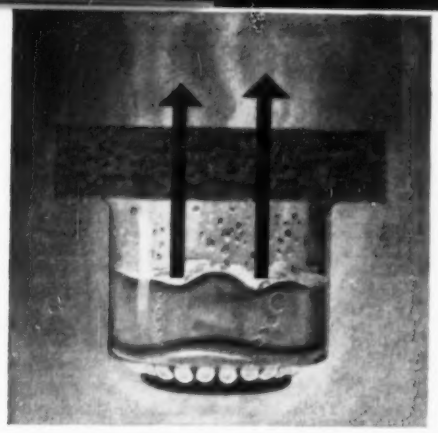
R-914 Stresses On Overhead Tracks —Covers track peening, discusses stresses. Cleveland Tramrail Div., Cleveland Crane & Engineering Co., Wickliffe, Ohio.

R-915 Scientific Materials Handling —Describes various materials handling devices, includes pictures. Bennett Rose Co., Box 8, Roebuck, S. C.

R-916 Overhead Materials Handling —Treats twin fan ceiling cleaners and shock proof electrification as well. Louden Machinery Co., Fairfield, Iowa.

R-917 Little Packaging Library — Series of booklets covers the business of shipping in corrugated boxes. Hinde & Dauch, Sandusky, Ohio.

R-919 Improved Materials Handling —"Materials in Motion" describes use of fibre containers. National Vulcanized Fibre Co., 1056 Beech St., Wilmington, Del.



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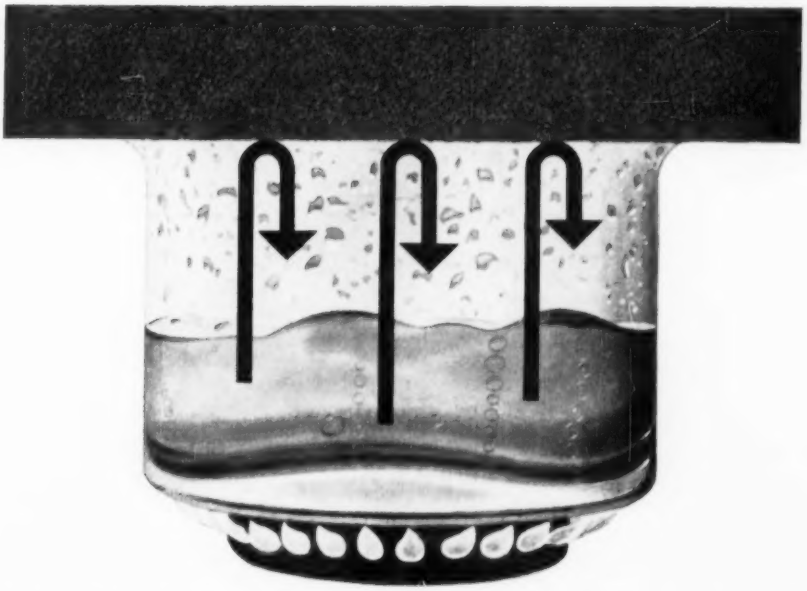

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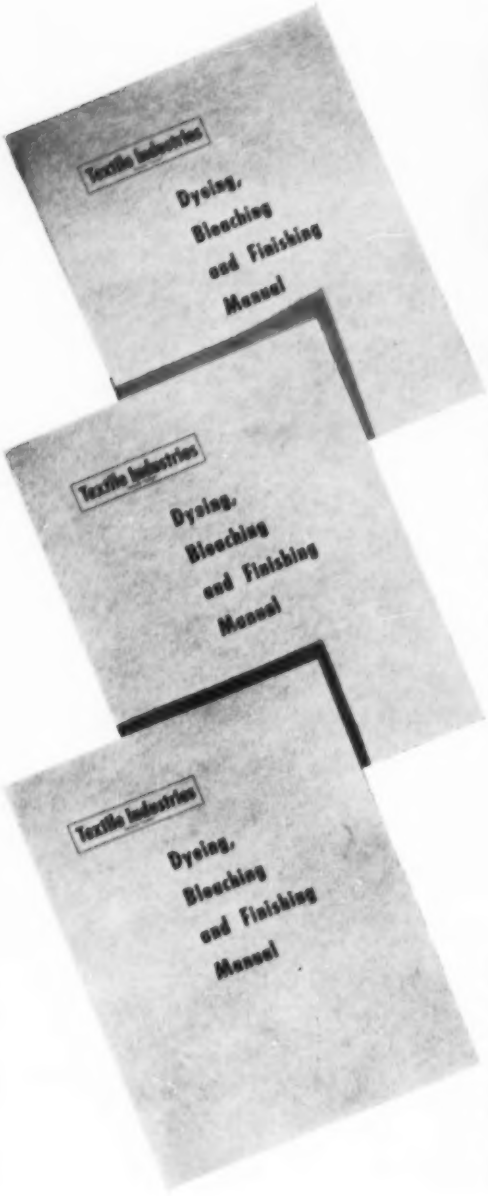

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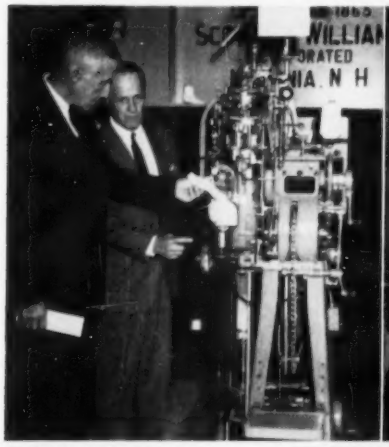
LEFT PHOTO: Commissioner of Patents Watson examines a seamless stocking from the Scott & Williams Model KN knitter. Explaining the operation of the machine to the Commissioner is Stanley Shelmire, a Scott & Williams engineer. CENTER: Richard C. Wetzel (left), president of Textile Machine Works, shows Secretary of Commerce Weeks (right) a ladies' stocking made on the "Reading" full-fashioned machine, while Commissioner Watson observes. RIGHT: Draper Corp.'s president, Thomas H. West (left), and Secretary Weeks look at the product of a Hemphill "Banner" machine for producing argyle patterned hosiery with overlay stripes.



American Enka's exhibit featured a machine for making bulked yarn. Pictured in the booth are (l to r): Albin F. Knight, patent counsel; Commissioner Watson; John Bitter, Enka vice-president; Secretary Weeks; Gaylord Davis, Enka vice-president; Ray Posten and Hilliard Penman, Enka engineers.

Washington exhibit shows technological progress under the American Patent System

■ THREE knitting machinery manufacturers and a man-made fiber producer were among 17 companies participating in a U. S. Patent Office exhibit staged in the lobby of the Commerce Department Building in Washington, D. C., October 22-November 15: Draper Corp., Scott & Williams, Inc., Textile Machine Works, and American Enka Corp.

With the theme, "Research and Progress in the Mechanical Field under the American Patent System," this was the ninth exhibit to be held under the Patent Office Exhibit program which was initiated three years ago with the sole objective of stimulating the American people towards greater technological achievement.

The accompanying illustrations are reproductions of photos which were taken at the formal opening when Secretary of Commerce Sinclair Weeks and Commissioner of Patents Robert C. Watson visited each booth.

According to Isaac Fleischmann, Assistant to the Commissioner Special Projects, three similar exhibits are scheduled for next year. Textile manufacturing and other firms are invited to participate in them and to show their achievements in terms of products and processes.

How to improve your public relations

■ AMONG suggestions recently made to members of the Alabama Textile Manufacturers Association by their public relations committee were:

1. Cooperate with your town by participating in civic, social, religious, and charitable activities. Encourage your employees to do the same.

2. Conduct plant tours so that the people in your community can become familiar with your operation.

3. Use every opportunity to appear before civic groups to tell your story.

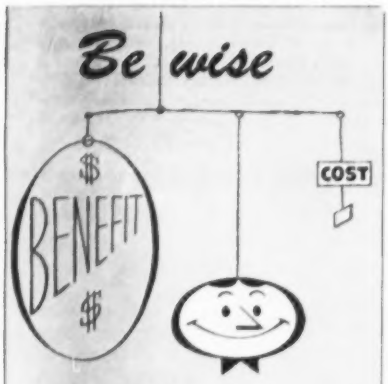
4. Entertain new public officials and acquaint them with your company and conditions.

5. Publish a company paper. Also send your company publication to key citizens in your town.

6. Get acquainted with the local editor and see that he gets news of important happenings in your company.

7. Beautify your grounds. People form an opinion by what they see.

8. Erect signs so that people will know who you are and what you make.



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Personal NOTES ABOUT MEN YOU KNOW

Transferred to the Rockwood (Tenn.) Plant of Burlington Mills, Greensboro, N. C., is **Joseph L. Turner,** formerly superintendent of the Vance Plant, Kernersville, N. C. **Tony Quinn,** former Vance superintendent, has resumed that post.

Callaway Mills Co., LaGrange, Ga., announces that **W. G. "Josh" Kilpatrick,** former Milstead cloth room second hand, began his new duties as overseer of that department on October 1. **Jack Sloan,** who has been in the textile laboratory of the research and development division, has assumed new duties as assistant overseer of carding at Unity. **Eugene Langford,** assistant overseer of sewing at Hillside, recently was promoted to overseer of carding. **Arnold Binns,** Valway warehouse and yard overseer, has retired following more than 31 years of continuous employment with the company. **Mark D. Harris,** Hillside warehouse and yard overseer, has retired following 38 years of service; and **Sam Spence,** Hillside weaving overseer, has retired after a period of 32 years with the firm.

Mr. Kilpatrick

Mr. Sloan

C. Earl Hodgekins, plant manager of Camden (Me.) Spinning Co., Inc., will continue operating that plant and will at the same time take over the running of the Bartlett Mills, Inc., Harmony, Me.

Clair Brasier is now boss carder at Cascade Woolen Mills, Oakland, Maine.

Collins & Aikman Corp., New York, N. Y., announces that **George Simpson** has been named general manager of the company's yarn division, assuming the duties of **F. A. Cornell** who has been acting as general manager, in addition to being resident manager of Plant K, the spinning division located in West Barrington, R. I. Mr. Cornell continues his duties as the Plant K resident manager. Just prior to joining C&A, Mr. Simpson was general manager of the Lowell plant and sales manager of the yarn division of Massachusetts Mohair Plush Co.

The promotion of two present company executives to be in charge of two new departments has been announced by The Duplan Corp., Winston-Salem, N. C. **M. E. Lance** is manager of the technical service department which replaces the former sales service department and which provides technical aid to knitters using yarn processed by the company. **William S. Wheeler** has been promoted to director of product research and development, and heads operations in creating new yarns to be sold by the company.

William C. King has resigned as executive vice-president of The Felters Co., Boston, Mass., and will continue to serve on the board of directors. Mr. King's plans include entry into private business.

Paul C. Beatty has been named manager of the Halifax (Va.) Mills, division of Pacific Mills, to fill the vacancy created by the resignation of John R. Sanders who had been with the company for eleven years. • • • New superintendent of Rhodhiss (N. C.) division is **Bernard L. Coleman,** succeeding C. S. Willard who resigned October 1, after a period of six years with the firm.

Recently named vice-presidents of Indian Head Mills are **Earl Rushon** and **James D. Whatley.** Mr. Rushon has been appointed to the newly created post of general merchandise manager, and will be responsible for merchandising all the company's products, including grey and finished cotton fabrics, sheets and other domestic products, and the grey goods

output of the subsidiary companies.

Mr. Whatley has been placed in charge of cotton purchasing for the company. He is succeeded as manager of the Cordova, Ala., mill by **Luchie Vickery,** former assistant plant manager.

Warren C. Bufton, manager of the Freehold, N. J., division of A. & M. Karagheusian, Inc., has announced his plans to retire on December 31 after 52 years of service in the American carpet industry. **Edwin B. Bachman,** assistant to Mr. Bufton, will replace him on January 1. **Leonard S. McGackin,** administrative assistant, will fill the position of assistant manager vacated by Mr. Bachman.

New director of research of The Kendall Co., Boston, Mass., is **Horace A. Secrist.** He is succeeded as director of research of the Kendall Mills division in Walpole, Mass., by **Ross Whitman,** formerly vice-president of chemical operations of Rayette, Inc., St. Paul, Minn. **Warner Eustis,** who has been Kendall's director of research and vice-president for research, will continue as vice-president.

Promoted to superintendent of dyeing and finishing at LaFrance (S. C.) Industries is **Norman McKinnon,** formerly director of methods and procedures for the firm.

Otto Stewich, formerly superintendent of the Lewiston (Maine) Woolen Mills is now with the North Berwick (Maine) Co. He has been succeeded at Lewiston by **Carl Nelson,** formerly boss carder there.

Named vice-president and general manager of Lowell Bleachery, Inc., St. Louis, Mo., was **Earl A. Hassebrock** who continues to handle the duties of sales manager. Mr. Hassebrock succeeds R. N. Rasmus who has resigned.

Now manager of Rocky Creek Mills at Turnersburg, N. C., succeeding Stewart Coffey, is **J. C. (Bud) Shaw, Jr.,** formerly of Crown Cotton Mills, Dalton, Ga.

William B. Harlan of Harrisburg, Pa., is new director of public relations for C. H. Masland & Sons, Carlisle, Pa. Mr. Harlan was previously with the Medical Society of the state of Pennsylvania. Named assistant public relations director and assistant editor of the company's house organ, "The Shuttle," was **Dick Hess** who formerly worked with the "Shippensburg News-Chronicle."

Ware (Mass.) Knitters, Inc., announce the election of **Maurice S. Dampier** as vice-president and director, a promotion from sales manager.

At West Point (Ga.) Manufacturing Co., **F. R. Piper** has retired as an assistant manager of the Fairfax Mill Division with a service record of 42 years with the firm.

John A. O'Neal has retired as cotton buyer for the Springs Cotton Mills, Fort Mill, S. C., following twenty years with the firm. Mr. O'Neal, who has also been in charge of waste sales, will in the future trade in cotton on a commission basis, beginning work for the 1957-58 season, in Clarksdale, Miss.

Newly named head of franchise and product development for both Wamsutta and Pacific Domestics, a new post at Wamsutta Mills, division

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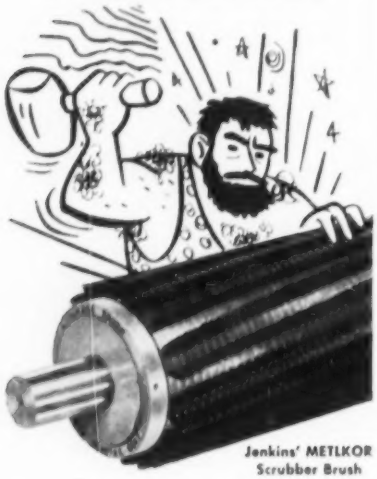
Columbus, Ga. — Chicago, Ill. — Providence, R. I.
Charlotte, N. C. — Springfield, Mass. — St. Louis, Mo.

NON-FLUID OIL is not the name of a general class of lubricants, but is a specific product of our manufacture. So called grease imitations of NON-FLUID OIL often prove dangerous and costly to use.

Is this the World's Toughest Test For Brushes?



Jenkins' METLKOR Scrubber Brush

When Dewey and Almy Chemical Company developed their high-speed blanket printing process "DAREX VERSA-PRINT" a difficult problem arose. Colors picked up by the "DAREX" embossed blanket had to be removed with each turn around . . . colors that contained gums, resins, rubbers, etc. They had to be removed by solvents, detergents and high pressure water sprays at washing and drying speeds of 180 yards a minute. A special automatic machine, the "DAREX" washer was developed, in which seven specially designed Jenkins' METLKOR brushes are used.

The DAREX Model HD Blanket Washer Unit

CRUCIAL TEST FOR JENKINS' BRUSHES

"It is difficult to imagine conditions more severe than for the first three scrubbing brushes in this machine," states Mr. H. H. Bailey, Sales Manager of Printing Products Division of Dewey and Almy Chemical Co., Div. of W. R. Grace and Co. "Temperatures range from 40° to 212°F. Vapors range from saturated steam to mixtures including high percentages of mineral and organic solvents, caustics and acids. At speeds up to 1300 rpm the brushes must not vibrate. Jenkins' brushes are more than equal to these requirements and provide long and satisfactory life."

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Serving Industry for 80 Years

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Personal NOTES ABOUT MEN YOU KNOW

of M. Lowenstein & Sons, Inc., New Bedford, Mass., is **Henry P. Lytle,** most recently associated with the United States Rubber Co.

Santo Morra, formerly with the now closed Almardon Mills, Lonsdale, R. I., is now superintendent of Bedford Mills, New Bedford, Mass., succeeding **Thomas Silk** who has retired.

Recently promoted to vice-president of Abbeville (S. C.) Mills Corp., and to vice-president of the worsted division of Excelsior Mills, Inc., Pendleton, S. C., was **George Asnip** who had been general manager of the worsted division and treasurer of Abbeville Mills.

John J. Goldsmith, for the past 20 years vice-president of Hess, Goldsmith & Co., has retired after a total of 37 years with the firm. Mr. Goldsmith plans to continue his residence in Larchmont, N. Y.

Duties of general manager of Neisler Mills division, Massachusetts Mohair Plush Co., Kings Mountain, N. C., have been assumed by **Alexander J. Maino** who fills the vacancy created by the resignation of William Ford.

T. B. Nilsen, Clinton (Mich.) Woolen Manufacturing Co., has been named chairman of the executive committee, National Association of Wool Manufacturers, succeeding **Harold J. Walter,** Bachmann Uxbridge Worsted Co. division of Amerace Corp., Uxbridge, Mass.

A. Phillip Goldsmith has resigned as president of Julius Kayser & Co. and subsidiaries and has sold his holdings in the firm to the Gera Corp.

Walter Spencer, who was overseer of carding at the now closed Hartford (Vt.) Woolen Mills, is now with Kenwood Mills, Cavendish, Vt., in a similar capacity.

Recently named general manager of Ponemah Mills, Taftville, Conn., was **Carl A. Johnson** who was previously associated with Bates Manufacturing Co., Lewiston, Maine, and J. P. Stevens & Co., Inc. In his new post Mr. Johnson will coordinate fixed and experimental production techniques in the cotton and rayon divisions, duties previously performed by Henry A. Truslow, president.

Tainto Haarala is now overseer of carding at Strong-Hewat & Co., Inc., North Adams, Mass.

Retiring as superintendent of Triangle Hosiery Co., High Point, N. C., after nearly 30 years of service with the firm, is **J. Paul Williamson,** who is being succeeded by **Claude Collins** formerly associated with Maurice Mills Co., Thomasville, N. C.

W. A. Pridmore, overseer of weaving at Aragon (Ga.) Mill, has resigned to accept a position as general overseer of weaving at Stonewall (Miss.) Mills of Erwin Mills, Inc.

Edgar R. Coddington, who has been assistant treasurer and assistant secretary of Sayles Finishing Plants, Inc., Saylesville, R. I., since 1947, is now a vice-president and director of both Sayles Finishing and Sayles Biltmore Bleachery. In 1950, he was made controller, an office he will continue to hold.

Help Fight TB

Buy Christmas Seals

At Union Bleachery, Greenville, S. C., **Robert W. Smith** has been promoted to assistant supervisor of continuous dyeing.

John W. McGovern has been elected president of United States Rubber Co. and designated chief operating officer by the board of directors. Formerly executive vice-president, Mr. McGovern succeeds **H. E. Humphreys, Jr.,** who continues as chairman of the board of directors and chief executive officer. Designated vice-presidents were **Eugene A. Luxenberger,** now responsible for the operation of the company's tire division, footwear and general products division, and mechanical goods division; and **George R. Vila,** now responsible for the operation of Dominion Rubber Co., Ltd., Latex Fiber Industries, Inc., and the chemical, textile, international, and plantation divisions. Also elected a vice-president and appointed general manager

of the chemical division succeeding Mr. Vila was **Earle S. Ebers. C. William Pennington** was named a vice-president and appointed general manager of the footwear and general products division, succeeding Mr. Luxenberger.

New officers of the Piedmont Section, American Association of Textile Chemists and Colorists, are as follows: president, **Warren E. Rixon,** of Union Carbide Chemicals Co., Charlotte, N. C.; vice-chairman, **J. C. King** of Metro-Atlantic, Inc., Greenville, S. C.; secretary, **Linton C. Reynolds** of Riegel Textile Corp., Ware Shoals, S. C.; treasurer, **V. Brown Wright, Jr.,** of North Carolina Finishing Co., Salisbury, N. C.; and custodian, **Arthur R. Thompson** of Ciba Co., Charlotte, N. C.

George S. Buck, Jr., formerly technical director of the National Cotton Council of America, in Washington, D. C., has assumed duties in a newly established research post—that of technical research assistant to Executive Vice-President Wm. Rhea Blake, with headquarters in Memphis, Tenn. Mr. Buck, Production and Marketing Director Claude L. Welch, and Utilization Research Director Leonard Smith will constitute a team which will have overall staff responsibility for technical research planning and development.

Recently elected officers of the Combed Yarn Spinners Association are **Charlton K. Torrence, Sr.,** Superior Yarn Mills, Mt. Holly, N. C., president, succeeding **Ben Rudisill,** Carlton Yarn Mills, Cherryville, N. C.; **Shannon M. Gamble,** executive vice-president and comptroller, Standard-Coosa-Thatcher Co., Chattanooga, Tenn., first vice-president; and **Alex W. Bell,** executive vice-president, American & Efird Mills, Mt. Holly, N. C., second vice-president.

Miss Irene Blunt, executive director of the National Federation of Textiles has been elected an honorary member of the Northern Textile Association in recognition of her 40 years of service and many contributions to the growth of the textile industry. She will continue actively with the Federation while details of the merger with American Cotton Manufacturers Institute are under way, following which she will become a consultant to the organization. She plans to reside in Fort Lauderdale, Fla. * * * **George B. Fenton** of The Duplan Corp. was elected chairman of the throwsters group at a recent annual meeting. Elected to serve as the group's vice-chairman was **Dalton L. McMichael** of Madison Throwing Co., and to serve on the executive committee, **E. Clay West** of Sauquoit Silk Co., Inc., was named.

The Textile Education Foundation, Inc., has elected as its new president, **John P. Baum,** vice-president of J. P. Stevens & Co., Inc., Milledgeville, Ga. **Henry W. Swift,** president Swift Spinning Mills, Columbus, Ga., was named vice-president of the Foundation. **J. M. Cheatham,** president of Dundee Mills, Inc., of Griffin, was named treasurer. **T. M. Forbes,** executive vice-president of the Cotton Manufacturers Association of Georgia, was elected executive vice-president. And **Frank L. Carter,** secretary of the Cotton Manufacturers Association of Georgia, was elected secretary.

At North Carolina State College, **Thomas L. Lassiter** has joined the department of fiber and yarn tech-

Our service is tailored to provide all the working capital any qualified client needs, without increased borrowing, diluting profits or interfering with management.

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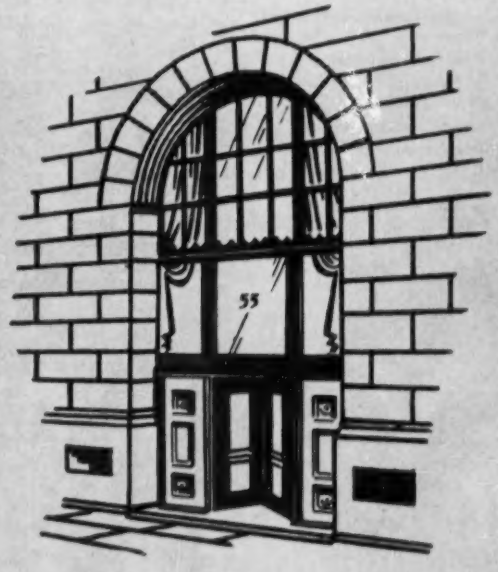

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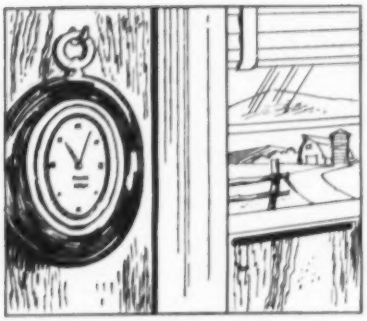

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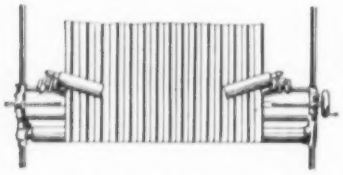

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GUIDER SPECIALTY COMPANY
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Personal NOTES ABOUT MEN YOU KNOW

nology in the school of textiles as an instructor. Mr. Lassiter has been working in the fiber laboratory of the textile division of Union Carbide Chemicals Co.

John H. McMahon, retired chairman of Berkshire Hathaway, Inc., Boston, Mass., has been named to honorary membership in the Northern Textile Association.

Recently appointed as special consultant to the textile, clothing, and footwear division, Quartermaster Research and Engineering Command in Natick, Mass., was **Roy A. Cheney** who in April of this year retired as president of the Underwear Institute, a position he had occupied since 1919.

OBITUARIES

Samuel Burg, 44, partner in Triangle Knitting Mills, Philadelphia, Pa.

Howard Campbell, 51, service representative for Paramount Textile Machinery Co., Chicago, Ill.

Clare H. Draper, Jr., 54, division manager of Draper Corp., Greensboro, N. C.

Obituaries Continued

John L. Graves, 68, sales manager of Saco-Lowell Shops, Boston, Mass.

G. Harry Hill, New England sales manager, Steel Heddle Manufacturing Co., Philadelphia, Pa.

Eugene M. Long, 79, president, Long Finishing Co., Burlington, N. C.

Theodore R. Louis, 82, former agent for the Kerr Mills of The American Thread Co., Fall River, Mass.

Clifton L. Schanley, 60, vice-president and foreman of Erntex Knitting Mills, Inc., Gilbertsville, Pa.

Frederick C. Scholler, 71, board chairman and founder of Scholler Bros., Philadelphia, Pa.

Walter C. Sturdivant, Sr., president of the Montgomery Knitting Mills and the Chattooga Knitting Mills, Summerville, Ga.

E. Earl Traver, executive of Union Dye & Finishing Works, Inc., Union, S. C.

Nicholas F. Walsh, founder and president of Walsh Knitting Co., Cohoes, N. Y.

W. P. Woodcock, sales engineer for American Moistening Co., South Weymouth, Mass.

J. Hillman Zahn, 64, retired manager of the southern office of H. W. Butterworth & Sons Co., Charlotte, N. C.

What the TEXTILE MILLS are doing

A community center in Winston-Salem, N. C., has been named in honor of James G. Hanes, board member of **Hanes Hosiery Mills Co.** The Hanes Hosiery Mills Co. Charitable Foundation gave $200,000 toward financing the center which houses the Chamber of Commerce, Arts, Council, and United Fund.

Kosciusko (Miss.) Hosiery Mills recently opened its new $250,000 plant with a citywide celebration.

The first textile firm to be licensed to use the Fabulized finish (a finish which imparts to nylon hosiery the feel and absorbency of silk or cotton without affecting nylon's characteristics of sheerness and durability) is **Laughlin Full-Fashion Hosiery Mills, Inc.,** Randleman, N. C.

The administrative offices, and packing and shipping departments of **Acclaim Hosiery Mills, Inc.,** High Point, N. C., are being moved to property on Kivett Dr. recently leased from Melrose Hosiery Mills, Inc.

Cone Mills Corp., Greensboro, N. C., has announced plans to sell almost 700 village houses. Employees of Cone have top priority on the purchases, and a payroll savings plan is in the offing to aid the employees interested to save the down payment. A realty firm will handle the sale which probably will take place in April or May of 1958.

At Charlotte, N. C., **Chadbourn Gotham, Inc.,** has patented a "full-fashioned stocking without a seam." Actually there is a seam of sorts in-

volved, and it is visible when the stocking is examined in the hand. However, it is flat and nonbulky, and is the same color as the rest of the stocking.

In Philadelphia, Pa., **Coren-Indik, Inc.,** a yarn producing firm, has been formed. The plant, operating on the woolen system, contains 30,000 sq ft on a single floor at Third and Ontario Streets. Mark Indik is president; Seymour Coren, secretary-treasurer.

A mill addition planned to tie in two existing weave rooms, and to stabilize the rooms which house high speed loom, is planned for the Number 1 plant of **Dundee Mills, Inc.,** Griffin, Ga. No additional looms will be added to the new space, but some looms will be moved there from the third floor of the weave rooms.

A recent announcement states that a verbal agreement exists between **Shuford Mills, Inc.,** Hickory, N. C., and United Merchants and Manufacturers, Inc., for the transfer of the Brookford (N. C.) Mills property to Shuford. The announcement further states that the buildings will be used only for storage purposes.

Alice Mfg. Co., Easley, S. C., soon will offer for sale to its employees 39 additional village houses.

In Webster, Mass., **French River Mills** has been established to produce fancy and novelty woolens, worsteds, and blends for the skirt, coat, and suit trades.

The Elmrose Div., Milstead, Ga., of **Callaway Mills Co.** recently installed two automatic heating units, totalling 200 horsepower, to furnish steam for the slashers and to heat the plant. The units are built to burn natural gas, or to be switched to fuel oil in case of gas shortage.

The $3 million carpet yarn plant of Mohasco Industries, Inc., **Oak River Mills,** recently was opened at Bennettsville, S. C. An integrated woolen operation, the mill will supply yarn to the Mohasco plant in nearby Dillon.

A sweater made of a specially modified spun Orlon yarn and knit on conventional machinery can be washed and dried mechanically. Called Taralan, the sweaters are made by **Talbott Knitting Mills, Inc.,** Reading, Pa.

United States Rubber Co. has announced plans to spend a minimum of $120 million on research and development over the next five years. One of the objectives is "to develop passenger car tires of such superior quality that they will give entirely safe, trouble-free performance at turnpike speeds." * * * The produc-

for superior finishes...
complete removal of size is a first essential

RAPIDASE®

UNEQUALLED FOR DE-SIZING AT HIGHEST TEMPERATURES AND AT HIGHEST SPEEDS

In concentrations to meet every requirement ... in liquid or powder form ... RAPIDASE is universally used for cottons and all fabrics containing man-made fibres.

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SERVICE is a "MUST"
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CASTERS AND WHEELS

RUBBER TREADS . . . a wide choice of treads suited to all types of floors, including Darneltoprene oil, water and chemical-resistant treads.
RUST-PROOFED . . . by zinc plating. Darnell Casters give longer, care-free life.

LUBRICATION . . . all swivel and wheel bearings are factory packed with a high quality grease that "stands up" under attack by heat and water.
STRING GUARDS . . . Even though string and ravelings may wind around the hub, these string guards insure easy rolling at all times.

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What the TEXTILE MILLS are doing

tion capacity for Trilok upholstery fabrics has been expanded by 50 per cent. The 3-D fabric, woven at **Winnsboro (S. C.) Mills,** will be used on 1958 models of three automobile manufacturers.

At Newton, N. C., **Whitener Hosiery Mills,** and **Whenball Hosiery Mills, Inc.,** have liquidated.

Recently the approximately 200 people who have been continuously employed by **United Elastic Corp.** since its founding in 1927, were honored at a dinner marking the 30th anniversary of that firm. Some 23 employees were given 50-year awards in recognition of their services with United and its predecessor company.

The Johnson City, N. Y., plant of the **Felters Co.,** is closing as soon as the goods in process are completed. Those employees making application for such will be transferred to the Millbury, Mass., plant.

According to a recent announcement, the employees of the **Glenlyon Print Works,** East Providence, R. I., are considering purchasing the facilities and continuing plant operations there. The plant is owned by Sayles Finishing Plants, Inc., Saylesville, R. I.

The Educational Loan Fund of **Burlington Industries, Inc.,** has contributed $500,000 in educational loans to sons and daughters of Burlington employees since 1946, the year the Fund was originated. With loans to 180 students attending 72 different universities and colleges for the school year 1957-1958 already in effect, the total of such loans approaches the 1300 mark.

The three remaining mills of **Wanskuck Co.** are being liquidated. Two of the plants, the Wanskuck and the Steere, are in Providence, R. I.; the third is in Oakland, R. I. The equipment involved includes all woolen and worsted operations from scouring to cloth finishing and dyeing.

Princeton Knitting Mills, Watertown, Conn., has introduced a throw rug called Pouff. A fluff-weight, high-pile rug of 100 per cent acrylic fiber, it will be made in a full range of pastel colors. * * * Chinella is the name of a high-pile coat fabric which resembles the world's most precious fur, offering even the illusion of natural light and dark shading—even when blown by the wind.

Giving as reasons unprofitable economic conditions in the coarse goods branch of the textile industry, directors of **Pacolet Mfg. Co.,** have decided to cease operations at Mill No. 3, Pacolet, S. C., and to offer the machinery for sale. The plant contains 147 cards, 43,000 spindles, and 1000 looms.

Buildings have been leased in Thomasville, N. C., for the operation of a new hosiery plant, **Park Hill Hosiery Mills,** in the production of men's and boys' hosiery, and anklets for women and children.

All the outstanding stock of Forstmann Woolen Co., and Julius Forstmann, Inc., has been acquired by **J. P. Stevens & Co., Inc.** The spinning and weaving operations at the Forstmann plant in Passaic, N. J., will be discontinued as soon as the stock in process is run out. All Forstmann woolens will continue to be dyed at Passaic. "Adverse conditions" forced the closing. * * * Fifty-two of the nation's top retail executives recently flew from New York City, inspected the Utica-Mohawk plant at Clemson, S. C., as guests of Stevens, and returned to New York the same day. * * * Clinton (Mich.) Woolen Co., was recently purchased by Stevens. The plant includes three sets of cards, 3300 spindles, and 48 looms.

The world's largest nylon heat treating unit has been installed in the headquarters plant of **The Firestone Tire & Rubber Co.** at Akron, Ohio. The unit is designed to give nylon cord special characteristics for the production of extra high quality tires. Said J. E. Trainer, executive vice-president, of the installation: "This new electronically controlled cord tensioning and gum dipping unit enables us to turn out special treated gum-dipped nylon to make tires that are safer, stronger, and longer lasting."

Approximately one-third of the anti-squeak pads used between the springs of Ford cars are made by **Talbot Processing Co.,** and **Georgia Webbing and Tape Co.** Both firms occupy a single building in Talbotton, Ga., and operate under the same superintendent. The pads are impregnated with wax to eliminate the need for grease at the point of their

use. Chrysler Corp. uses part of the plant's output.

Miss Rosalind Lea Abercrombie, honor graduate of George Washington High School (Danville, Va.) class of 1957, won the **Dan River Mills'** 75th Anniversary Essay Contest, jointly sponsored by the company and Danville's Chamber of Commerce. The prize: $150. The second prize of $100 was won by Sarah Helen Shelhorse, also a 1957 honor graduate of that school. The third prize went to Gary Jefferson Dalton who entered the junior class of George Washington High this fall. The essay subject: "Describe the economic, social, and other benefits that Danville has derived from the growth of Dan River Mills, Inc., over a span of 75 years."

The building which formerly housed The Glenn Hosiery plant in High Point, N. C., (a 20,000 sq ft building on Kivett Drive) has been leased by **Acclaim Hosiery Mills, Inc.,** also of that city. All dyeing and finishing for Acclaim will be carried out in the leased building. Additional dyeing equipment will be purchased.

Winners in Fulton Bag's waste control program contest are pictured here with J. F. Greene (center), general manager of manufacturing. From left to right they are: Carl Kimble, spinning secondhand, Mill No. 1, second place; Charlie Bishop, weaving secondhand, Mill No. 2, third place tie; Mr. Greene; E. A. Crump, carding secondhand, Mill No. 1, third place tie; and Robert Gladden, carding secondhand, Mill No. 1, first place.

At a recent banquet in Atlanta, Ga., **Fulton Bag & Cotton Mills** paid honor to a group of supervisors who had completed a course in waste control. Those second hands who had made the greatest reduction in waste on their jobs were awarded substantial prizes. The course consisted of weekly meetings devoted to practical problems in waste control — problems submitted by the foremen, and solved by the foremen. Each third week a movie on waste problems or on leadership supplemented the information each foreman had gathered or had been given. * * * Fulton Bag has sold its Denver, Colo., textile bag manufacturing plant to Fulton-Denver Co.

The **F. W. Poe Mfg. Co.,** Greenville, S. C., a member of Burlington Industries, Inc., recently entertained its employees and members of their families (more than 2300 invitations were issued) at the Paris Mountain State Park.

LOCKWOOD GREENE PROJECTS IN...

WOOL PROCESSING

Lockwood Greene's work, originating in 1832 with the design of textile mills, amounting to a present total of around one billion dollars in value, now includes the first of two wool processing plants in the Southeast, here shown, for the world's two largest wool processing firms.

Wellman Combing Co., Johnsonville, S.C.
This plant, the first wool processing plant in the Southeast, and owned by Nichols and Company, Inc. of Boston, the largest wool treatment concern in the country, recently went into production. It has a capacity of 20 million pounds of grease wool per year, and is planned for enlargement to four times that capacity.

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SUPPLIERS News

WHAT THEY ARE DOING

Union Special Machine Co. announces two new appointments in its Atlanta office. Joe Parker, former representative, has been appointed special representative, a newly-created position. Taking over the territory vacated by him, is Garnet H. Hamlet, who has been appointed representative. Mr. Parker's new duties include working with customers on new applications, special applications, follow-up on large installations, and assisting representatives wherever necessary with sewing problems. Mr. Hamlet has had extensive experience in the needle trade.

Textile people in the southwest will have the opportunity to view in operation the new **Uster Corp.** continuous quality control testing instruments at a showing to be held at the Hotel Adolphus in Dallas, Texas, December 4 and 5, 1957. Featured will be the Spectrograph, Hy-Lo Indicator, and Custom Tension Recordograph.

Cocker Machine and Foundry Co., formerly of Gastonia, N. C., has completed its move into new offices at Ranlo, near Gastonia. Manufacturing is under way in the new plant, offices and manufacturing areas of which cover 90,000 sq ft on a 17-acre tract. The new offices cover about 9,000 sq ft. Recent additions to the manufacturing area include 44,000 sq ft. Delivery schedules have been improved considerably as a result of the new and expanded facilities, according to John Cocker III, president of the firm.

C. W. Bendigo has been appointed to the executive staff of **Werner Textile Consultants,** as coordinator of all textile market research assignments. Mr. Bendigo headed the Creslan acrylic fiber project for American Cyanamid Co., and prior to his resignation was technical director for their fibers division.

The establishment of a Canadian division by **Wheelabrator Corp.,** has been announced. The new plant is located in Scarborough, (metropolitan Toronto), Ontario. Robert A. Campbell is general manager of the division. The Montreal office has been expanded to include a dust and fume control engineer.

Whitin Machine Works announces the following new machinery orders and recent mill installations of equipment:

The American Thread Co., Tallapoosa (Ga.) Mill, has installed 37 Superflex spinning frames, with a total of 10,788 spindles.

Avondale Mills has purchased 48 deliveries of Model M Even-Draft drawing and two Super J combers for installation at Birmingham, Ala.

Sidney Blumenthal & Co., Inc., Valley Falls, R. I., has completed installation of 16 Superflex spinning frames with a total of 3,840 spindles, seven Monarch sliver-to-yarn spinning frames with a total of 1,232 spindles, three American System Quik-Set roving frames, and two Roto-Drafters.

In the Leaksville, N. C., plant of Fieldcrest Mills, Inc., 68 spinning frames are being changed over to the

Aerial view of Cocker Machine & Foundry Co.'s facilities at Ranlo, N. C.

Super-Draft system and the traverse is being lengthened on 80 frames. At the **Draper, N. C.**, plant 46 spinning frames are being modernized by the installation of new cylinders and twist gearing. At the **Fieldale, Va.**, plant 14 spinning frames are being supplied with Super-Draft system; 80 deliveries of Model M Even-Draft drawing and ten Hi-Pro Long-Draft roving frames are being installed. The company has also purchased 139 18" x 42" card coilers.

National Yarn Mills, Inc., Belmont, N. C., has ordered seven Long-Draft roving frames.

Palmetto Worsted Mills, Laurens, S. C., is converting six worsted spinning frames to Whitin system of Long-Draft.

Rocky Mount (N. C.) Mills is installing eight Hi-Pro Long-Draft roving frames.

D. E. Rhyne Mills, Inc., Lincolnton, N. C., is applying Long-Draft to nine roving frames.

Stanley Woolen Co., Uxbridge, Mass., has purchased two Model E wool spinning frames.

Stowe Spinning Co., Belmont, N. C., has ordered six Long-Draft roving frames, and 40 spinning frames are being converted to Super-Draft.

Trio Manufacturing Co., Forsyth, Ga., has installed two new Long-Draft roving frames.

Frederick S. Miller has been promoted to manager of worksaver and warehouser sales for Yale materials handling division, **The Yale & Towne Manufacturing Co.** Mr. Miller had been serving as assistant sales manager of the two product lines.

Approximately 50 financial officers, representing 11 leading textile manufacturing companies in the Piedmont area, were guests of **Celanese Corp. of America** at its textile division headquarters in Charlotte, N. C., at a two-day "idea exchange session" September 25-26. Purpose of the meeting was to permit exchange of ideas and methods of procedure in compiling company data by means of electronic machines, and evaluating computed material in accord with the most up-to-date methods and procedures. * * * Louis F. Laun has been appointed general merchandising manager of the textile division. For two years previously, Mr. Laun had been in charge of advertising for Burlington Industries, Inc., and of coordinating staff marketing and out-of-town sales office activities. He succeeds Paul D. White, resigned.

Crown Chemical Corp. announces the promotion of Fred C. Grant to the position of vice-president and director of sales, a step planned to give the technical sales force a closer tie with top management.

Charles E. Daniel of **Daniel Construction Co.**, recently received the second annual good citizenship award of the Greenville, (S. C.) Chapter of the Society for the Advancement of Management for "daring to think, to act, to live as a free, responsible individual."

At **Weston Electrical Instrument Corp.**, a subsidiary of Daystrom, Inc., Emil Nichols has been named manager of test equipment sales. Mr. Nichols was formerly with Allen B. Du Mont Laboratories; A. R. Walthers is new manager of tachometer sales, and Paul M. Heilman, formerly national distributor sales manager for Reliance Electric and Engineering Co., has been named distributor sales manager. * * * To provide more comprehensive sales-engineering services to instrument users in the New England region, the company has

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Walter Horn (second from left) of Robert Reiner, Inc., conducts officials of American Velour Mills through his company's demonstration truck. Left to right: H. Goldstein of American Velour, Mr. Horn, Irv Olian, American Velour, and William Whary of Reiner.

opened a Boston district sales office at 66 Central St., Wellesley, Mass. Manager of the new office is Edward P. Reid, formerly of the New York district office staff.

L. J. Wing Manufacturing Co., division of Aero Supply Manufacturing Co., Inc., announces the appointment of Stromquist & Co., 3158 Maple Drive, Atlanta, Ga., as representatives in all of Georgia except the southwest portion for the Wing line of revolving unit heaters, fans, blowers, draft inducers, and steam turbines.

The retirement of Walter A. Mohr, senior vice-president of **James Talcott, Inc.,** following 28 years of service, became effective on September 30, this year. Mr. Mohr will remain on the board of directors and will continue to serve as a member of the company's profit sharing plan committee.

Vern M. Coulson, for thirteen years the representative for **Oakite Products, Inc.,** in Evansville, Ind., has been transferred to Fort Worth, Texas. Thomas A. Reilly, Jr., who recently completed an intensive eight week training program at Oakite's New York laboratories and in the field, has been assigned to Trenton, N. J.

The new million-dollar facilities of **Shawinigan Resins Corp.** for the production of Gelvatol, polyvinyl alcohol, are in production at the company's plant in Springfield, Mass. Standard grades of Gelvatol are suitable for all applications including textile sizes, an executive of the firm stated.

Robert Reiner, Inc., has recently bought and equipped a demonstration truck to bring Reiner equipment right to the mill doors. The truck, which also carries a full line of the firm's catalogs and other pertinent matter, is operated by William Whary, long-time Reiner employee. In charge of the work and the machines on demonstration is Walter Horn who has been in warp knit, creel, and warping sales work at Reiner for many years.

James M. Faria has joined **The Chemstrand Corp.** as a senior technical sales service representative to work out of the Decatur, Ala., office. Mr. Faria has formerly been research engineer with Du Pont. Other additions to the staff are Loyd M. O'Guin, Jr., senior representative in the technical sales service department, Decatur, who was formerly dyer and foreman with the Franklin Process Co. at Chattanooga, Tenn.; and Edward H. Sieber, manager of consumer marketing research, whose headquarters are at the chemical textile fiber firm's administrative and marketing offices in New York City. * * * Appointment of three technical sales service representatives has been announced. They are Robert E. Freeman, E. Ken McIntosh, and Hugh L. Middleton. All are being transferred from the technical department of the Chemstrand nylon plant at Pensacola, Fla., and will continue to be based at Pensacola.

John N. Gregg has been appointed a sales representative for **American Viscose Corp.** Representing the staple division, Mr. Gregg will work out of the Charlotte office beginning in January.

Winthrop Rockefeller (right), chairman of the Arkansas Industrial Development Commission, is presented a gold caster at the opening of the new three-quarter million dollar caster plant of the **Colson Corp.** in Jonesboro, Ark. The presentation was made by Robert A. Pritzker (left), president of Colson and its parent organization, Great American Industries, Inc., in recognition of the role played by the AIDC in bringing Colson to Jonesboro. Some 12,000 different industrial and institutional casters will be manufactured in the 90,000 sq ft facility.

Ernest C. Hungate has been named industrial air conditioning product specialist for the machinery and systems division of **Carrier Corp.** Mr. Hungate has been serving in the application engineering department for the division, spearheading development of the new Rotaspray Weathermaker for air conditioning of textile mills.

To supply the needs of the metal industries in the southeast, **Southern Tool Distributing Co.** maintains in its Atlanta, Ga., warehouse a complete stock of metal cutting tools, precision tools, and die maker's supplies, eliminating the need for customers to wait for factory delivery. The new company is headed by R. L. Hill, president; James T. Swygert is secretary and treasurer.

Opening of a New York sales office for the textile fibers department of **The Dow Chemical Co.** has been announced. Assigned to the new office to coordinate the department's New York marketing operations for Zefran, the firm's new textile fiber, is Alfred Greenfield. * * * A newly formed sales group will operate from department headquarters at Lee Hall, Va., where Dow has more than half completed a fiber research, development, production and sales center. * * * Harry E. New now heads up textile yarn and fabric development in textile development. Other additions to the group include Hal E. Brockmann, formerly with Stonecutter Mills Corp., Spindale, N. C., and David M. Clark, formerly of Chatham Manufacturing Co., Elkin, N. C. Robert L. Burgess, formerly with Burlington Industries, and Charles R. Sheehan from Hockmeyer Brothers, Inc., Lowell, Mass., have recently joined the group's dyeing and finishing section. David C. W. Knok, who has been with the textile development group, has received a new assignment as administrative assistant to the group's manager.

SUPPLIERS News — WHAT THEY ARE DOING

The Fletcher Works, Inc., announces the appointment of Eldon Stowell as manager of the company's yarn processing machinery division. Mr. Stowell was formerly technical

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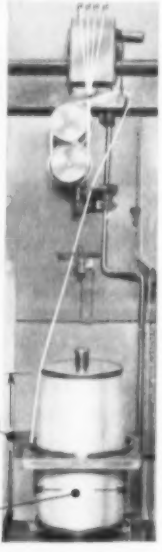

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SUPPLIERS News — WHAT THEY ARE DOING

director of Brant Yarns, Inc., Charlotte, N. C. T. Bayard Baldridge, Jr., resigned as manager of the division after ten years of service with the company. * * * The firm has expanded its narrow fabrics loom rebuilding department as a special service to customers. New, high-speed production equipment has been installed.

Instron Engineering Corp. is building a new 25,000 sq ft plant in Canton, Mass., which will be devoted to the design and production of universal testing machines and other electronic test equipment. The building will also house the company's administrative and engineering offices.

Interchemical Corp. announces that its second motion picture on the subject of color, "Color Magic," has been released for fall showings to industry, college, and artist design groups throughout the country. Arrangements for borrowing this 16mm, 22-minute sound movie which illustrates some of the more important principles involved in using color in industry, in design, and in the home, may be made through firm representatives, or through Interchemical Corp., 67 West 44th St., New York 36.

At a recent meeting of the **Knitting Machine Manufacturers' Association** the following officers were elected: Norman Richards, Textile Machine Works, Reading, Pa., president; Albert Friedmann, Karl Lieberknecht, Inc., Reading, Pa., vice-president; Beale J. Faucette, Scott & Williams, Inc., 350 Fifth Ave., New York, N. Y., secretary-treasurer.

The officers of **Morningstar, Nicol, Inc.,** and Federal Adhesives Corp. mutually announce the affiliation of their companies. The new Federal acquisition includes the following affiliates: Adex Manufacturing Co., Federal Latex Corp., and Federal Chemicals Corp. The sales and technical service staffs of both companies will continue unchanged, each specializing in its particular field.

National Aniline Division, Allied Chemical & Dye Corp., has announced the retirement of Robert F. Holoch, veteran dyestuff salesman associated with its New York sales for more than 36 years.

Ciba Co., Inc., has engaged Paul Luck as special assistant to the general sales manager. Mr. Luck was formerly vice-president and general manager of Peerless Color Co.

H. Alison Webb, manager of the Chattanooga, Tenn., branch and sales office of **General Aniline & Film Corp.,** has been named assistant sales manager for dyestuffs and pigments, with headquarters at the home office of the dyestuff and chemical division, in New York City.

New York district offices of the chemical division of **Goodyear Tire & Rubber Co.,** have been moved to new quarters and now are located in the Manhattan business district at 400 Park Ave., New York 22. Sales and technical service for all products marketed by the Goodyear Chemical Division to textile and other industries are available through this office. * * * Appointment of J. L. Jenkins as special field representative for the chemical division has been announced. With headquarters in Cleveland, Mr. Jenkins will service textile, paint, and paper processors located in the mid-central states.

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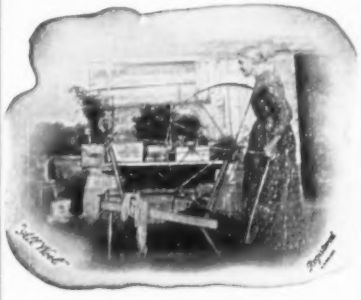

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Mr. Bagian
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Mr. Thwaite
Trust Co. of Ga.

Mr. Merritt
Staley Mfg. Co.

Mr. Abbott
Graton & Knight

Mr. Lanier
Watson-Desmond

Joseph G. Beasten has been appointed manager of the Philadelphia district office of **National Vulcanized Fibre Co.**, succeeding Thomas B. Baldridge who has retired after 44 years of service. Mr. Beasten has been associated with National for 30 years.

Albert Bagian, formerly vice-president in charge of sales and engineering, for Smith, Drum & Co., has joined **Turbo Machine Co.**, Lansdale, Pa., to direct the sale of Smith-Drum machines. Turbo has also announced that Parrott and Ballentine, Greenville, S. C., will continue as representatives for Smith-Drum machines in the South.

Charles E. Thwaite, Jr., president of the Fourth National Bank of Columbus, Ga., has been elected president and a director of the **Trust Co. of Georgia.** Marshall B. Hall, president of the Trust Co. since January, 1948, has been elevated to the position of vice-chairman of the board.

All facilities, assets and good will of the **Frank F. Fuller Co.** were purchased recently by **James Hunter, Inc.**, permitting the latter to add Fuller spraying systems for lubricant application to textiles to its line of textile equipment.

E. I. du Pont de Nemours & Co., Inc., has announced it would discontinue the production of Type 168 "Super Cordura" high tenacity rayon at its Richmond, Va., plant on December 1, in preparation for starting up its new nylon plant scheduled to begin producing in January, 1958.

David R. Eagleson has been promoted to assistant sales manager of the fatty acid sales department of **Emery Industries, Inc.**, and Paul N. Leech has been named his successor as sales representative in the Chicago area which includes northern Ill., Wis., Minn., northwestern Ind., and upper Mich.

Ben O. Merritt, Jr., of Greenville, S. C., is now with the **A. E. Staley Manufacturing Co.**, as a technical representative for the textile industry. Prior to joining Staley, Mr. Merritt served as assistant manager and overseer in several textile mills. His new headquarters will be the company's branch office in Atlanta, Ga.

George L. Abbott is newly named president of **Graton & Knight Co., Inc.**, purchaser of the **Warren Belting Co.**, of which Mr. Abbott is also president. Hans Anderson is general manager of Warren, and Robert M. Abbott sales manager of the leather division. John G. Henricson continues as vice-president in charge of sales. Sales staffs of both companies will be maintained intact, but will operate independently.

Watson & Desmond announce the appointment of H. Dorsey Lanier of Shawmut, Ala., as Georgia-Alabama representative succeeding Hugh K. Smith who is going into business for himself. Mr. Lanier, formerly with National Ring Traveler Co., will have charge of Watson & Desmond's office in West Point, Ga.

Emkay Chemical Co. is building its fourth addition in seven years, which will provide approximately 4,000 sq ft adjoining its present plant and will temporarily be used to warehouse raw materials and finished products. The new building is being designed and fitted with all utilities so that it

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Square D Company's new regional assembly plant in Atlanta, Ga.

can be converted to additional manufacturing area in short time. The firm has increased its sales staff to ten representatives covering the textile, paper, and leather trades from Canada to Alabama.

Ralph D. Padgett has been elected to the post of vice-president in charge of technical service for **Roberts Co.,** manufacturer of textile spinning frames. Formerly manager of technical service, Mr. Padgett will continue to handle all his former responsibilities with special emphasis on increased technical service to customers and potential customers. * * * Irving S. Bull has joined the firm as research engineer. Mr. Bull was staff engineer in the mechanical department of Firestone Textiles, Gastonia, N. C.

American Moistening Co. has appointed L. D. Terry as sales engineer for the South Carolina territory. With AMCO for fifteen years, Mr. Terry has been transferred from Atlanta to southern plant headquarters at Cleveland, N. C.

The newest regional assembly plant of the **Square D Co.,** located at 1401 Marietta Boulevard, N. W., Atlanta, Ga., provides in excess of 30,000 sq ft of floor space and serves as headquarters for regional sales operations for its electrical distribution and control products in Georgia and surrounding states. The new plant makes possible an expansion of the company's long-established activities in the area: standard product stores, customer service and engineering, plus the addition of complete job shop and custom assembly facilities.

The Darnell Corp., Ltd., announces the appointment of Robert J. Geberth as manager of the New York division. Mr. Geberth was previously field representative in N. Y. and Pa. Walter Harryluk and John V. Gardner have been named to posts as field representatives. * * * The Cameron-Barkley Co. has been designated as a new distributor for Darnell products in the southern market.

SUPPLIERS News
WHAT THEY ARE DOING

C. G. Sargent's Sons Corp. have appointed "Ike" Farley, The Alpha Engineering Co., P. O. Box 12371, Houston 17, Texas, as their sales engineering representative for the central and southern Texas and the Gulf Coast areas. The appointment includes the entire Sargent line of textile machinery and also Sargent's industrial dryers and feeds. * * * The firm has purchased the property formerly known as the Abbot Worsted Mills in Graniteville, Mass. The purchase includes the mill of 56,000 sq ft and a separate, adjacent office building.

Ben E. Harry has been appointed general service manager for all divisions of **Veeder-Root, Inc.,** with headquarters at the home office in Hartford, Conn.

Industrial Rayon Corp. has announced the election of Frederick L. Bissinger, formerly vice-president in charge of research, to the newly created position of group vice-president—marketing and research. Moses P. Epstein, previously vice-president in charge of merchandising, has been named vice-president in charge of marketing, and Dr. Gilman S. Hooper, formerly manager of the high polymer research division, has been elected director of research.

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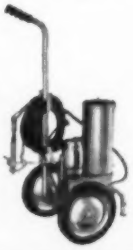

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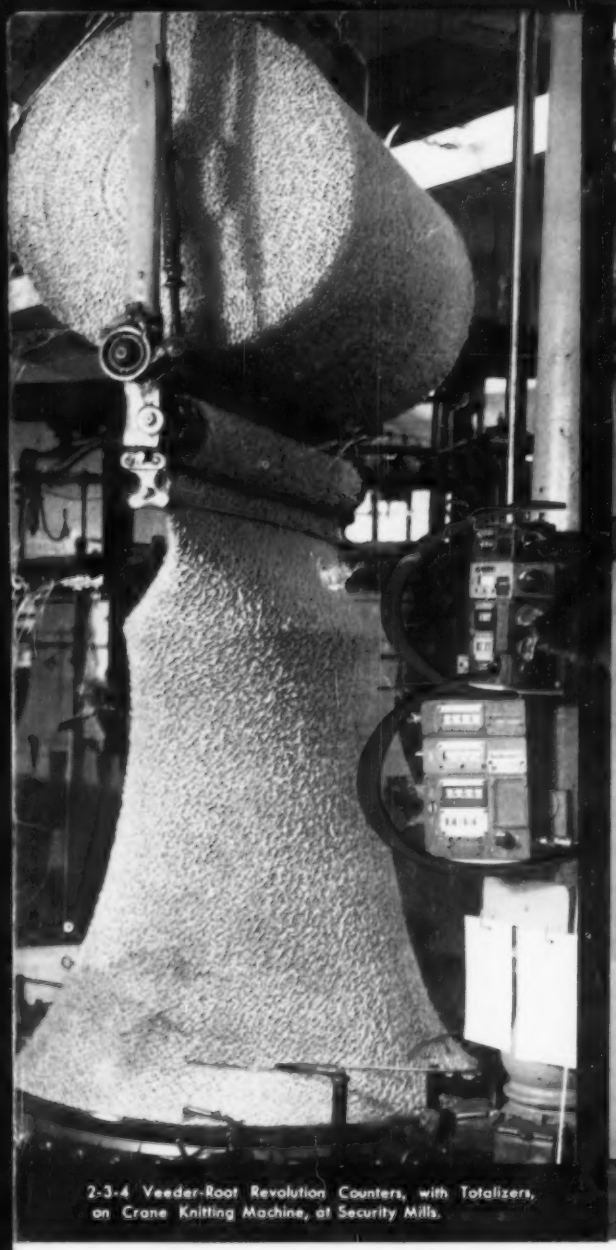

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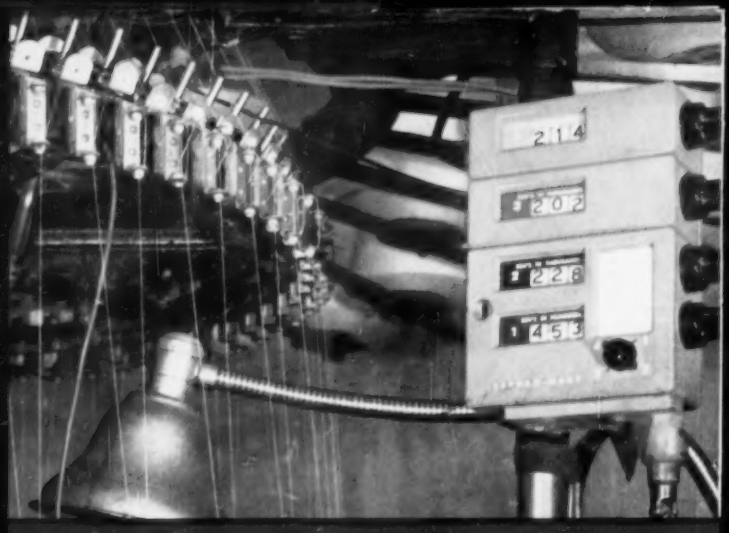

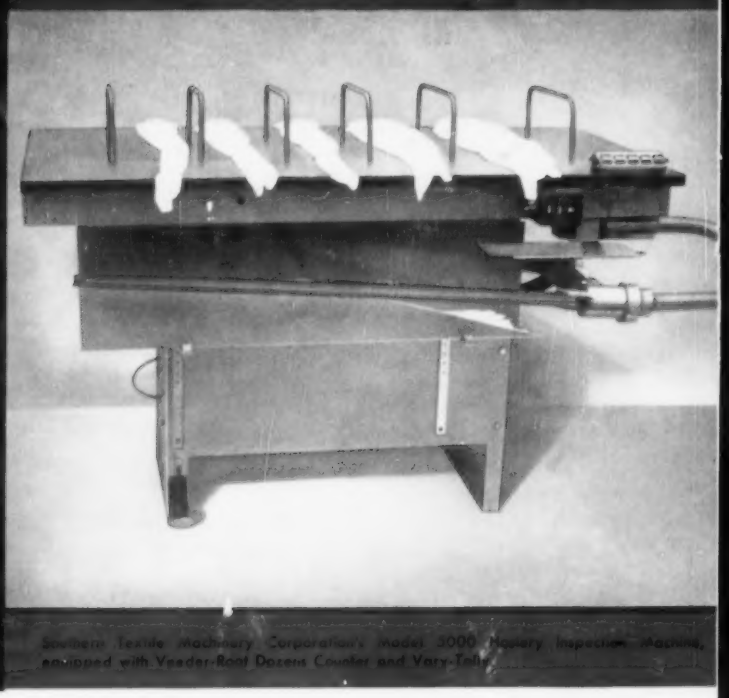

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